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THE

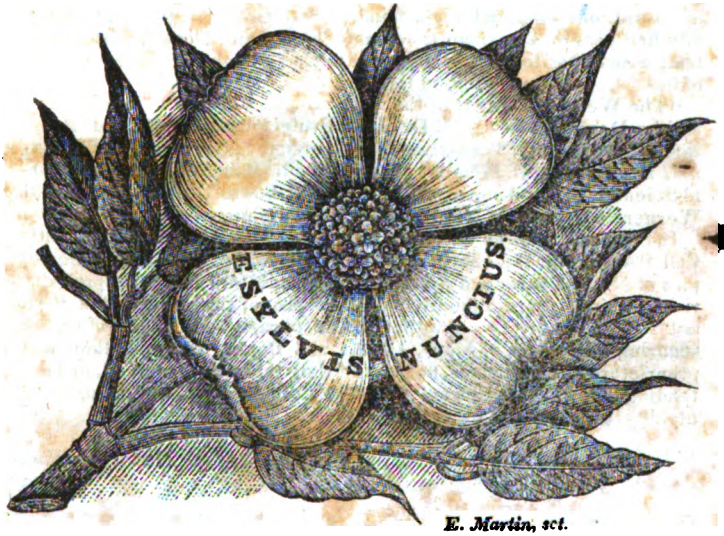
WESTERN JOURNAL

OF THE

MEDICAL AND PHYSICAL SCIENCES.

EDITED BY DANIEL DRAKE, M. D.

Late Professor of the Theory and Practice of Medicine in Transylvania University; Surgeon of the Cincinnati Eye Infirmary; Member of the Philadelphia Academy of Natural Science; of the American Philosophical Society; and of the Royal Wernerian Society of Natural History, Edinburgh.



E. Martin, sct.

VOLUME II.

CINCINNATI, OHIO:

PRINTED MONTHLY BY WHETSTONE AND BUXTON,

FOR THE EDITOR.

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1829.

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DISTRICT OF OHIO, *Sct.*

BE IT REMEMBERED, that on the first day of March, in the year of our Lord, one thousand eight hundred and twenty-eight, and in the fifty-first year of American Independence, Daniel Drake, of said district, hath deposited in this office the title of a book, the right whereof he claims as proprietor, in the words following, to wit:

"The Western Journal of the Medical and Physical Sciences. Edited by DANIEL DRAKE, M. D. Late Professor of Theory and Practice of Medicine in Transylvania University: Surgeon of the Cincinnati Eye Infirmary: Member of the Philadelphia Academy of Natural Science: of the American Philosophical Society: and of the Royal Wernerian Society of Natural History, Edinburgh—"

In conformity to the act of the Congress of the United States, entitled "An act for the encouragement of learning, by securing the copies of Maps, Charts and Books to the proprietors of such copies, during the time therein mentioned;" and also of the act entitled "An act supplementary to an act for the encouragement of learning, by securing the copies of Maps, Charts and Books to the Authors and proprietors of such copies, during the time therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

WILLIAM KEY BOND,
Clerk of the District of Ohio.

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PREFACE.

In the prospectus accompanying the first number of this volume, the Editor apprised those to whom it was sent, that being on a similar plan to the Western Medical and Physical Journal, it might serve as a continuation of that work, to all who chose to receive it as such. At that time it was uncertain whether the journal to which he refers, would be continued; and he promised to send to new subscribers a different title page for this volume, from that with which he would furnish those who had taken that work. Its discontinuance, however, renders such a measure unnecessary; and the Editor sends forth this volume (its title substantially the same with that of its predecessor) as the second volume of the work which he projected in 1827.

The Editor has devoted more time to this, than the first volume; but misfortunes, which he has already made known to his subscribers, have prevented his bestowing upon it as much labour as he hopes to exert on the work in future.

In originally fixing on the plan of monthly numbers for his work, the Editor was governed, chiefly, by the opinion, that frequent publications would be most aceptable to the profession, as communicating earlier intelligence. He was not aware, however, of the greater labour and expense attendant on frequent publications; of the difficulty of finding room in a number consisting of fifty pages only, for extended reviews; or of the increased chances of loss by the mail, from sending off twelve numbers a year, instead of four. He has determined, therefore, after consulting some of his valued friends and correspondents, to publish the work, hereafter, in quarterly numbers, of 150 pages each. The first number of the third volume, will be ready for delivery, by the end of June. It will be printed on paper and put up in a style, decidedly

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superior to the preceding volumes, over which the Editor flatters himself, it will rise still further in the character of its contents.

The first article of each of the four numbers of the next volume, will be devoted to the important subject of Medical Education, particularly in the Western states; a subject to which the Editor has devoted some attention, and which he hopes to treat in such manner as may contribute something to the advancement of the profession, in dignity and usefulness.

The first number will also contain a practical paper on Auscultation, with an engraving of the Stethoscope; an instrument of diagnosis, with the use of which every physician should be familiar.

The Editor has made arrangements to obtain, at an early period after their publication, all the most important systematic and monographic treatises, the substance of which he proposes to give in the form of analytical reviews; similar to those of De Candolle's Essay on the Medical Properties and Affinities of Plants; Abernethy's Lectures on Anatomy, Physiology and Surgery; and Civiale's Treatise on Lithontrity, contained in the present volume. Among the subjects which in the prosecution of this plan he intends, at an early period, to present, *in extenso*, are the Doctrines and Practice of Broussais.

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THE

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ESSAYS AND CASES.

ART. I.—*A discourse on* INTEMPERANCE; *delivered by appointment, at a public meeting of the Agricultural Society of Hamilton County, Ohio, March 1st*, 1828, *and subsequently pronounced, by request, before a popular audience. By* DANIEL DRAKE, M. D.

"The pestilence that walketh in darkness."

[*Concluded from No. I.*]

SEC. V.—OF THE MORBID EFFECTS OF ARDENT SPIRITS ON THE BODY AND MIND.

We have already seen that alcohol is a poison. Taken undiluted, even in no great quantities, it kills suddenly;—used daily, in smaller doses, diluted, it is a slow poison, and kills at a more distant time,—but with equal certainty. Even a single fit of drunkenness is a disease which may prove fatal; and the frequent recurrence of such an attack, especially in early life, is seldom long sustained. Great injury to health and constitution may, however, be occasioned by the habitual use of ardent spirits, though actual intoxication be studiously avoided. The proper limits of a discourse do not admit of a full account of the various disorders of body and mind that are occasioned by this abuse; but enough may be said, to warn those who are about to yield to temptation, of the diseases they should prepare to encounter.

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The disorders of body produced by habitual intemperance, are various in different persons, and at different periods of life.

1. In nearly all, the STOMACH, from being the receptacle of the poison, becomes greatly disordered. At an early period the appetite begins to decay, and at last is almost extinguished. The stomach becomes irritable, and vomiting occurs in the morning. At length, a great degree of irritation, and sometimes actual inflammation, takes place in the inner surface of that organ; and, indigestion or dyspepsia, with its loathsome crudities and cankering acids, becomes permanently established.

2. Next to the stomach, the LIVER is, perhaps, the greatest sufferer. At first it is strongly excited, and secretes an excessive quantity of bile, which leads the inebriate to say that he is bilious; for which, with admirable facility, he resorts to bitters: thus recklessly feeding the flame with spirit, instead of quenching it with water. Actual inflammation at length supervenes, and is harrassed with a slow fever. In the progress of time, the liver becomes changed in its texture, hardened, and obstructed. It fails to secrete bile, and a dark and muddy JAUNDICE indicates the approach of death, which is seldom slow in arriving.

3. From sympathy with the stomach and liver, or in some other way, the LUNGS become affected. A cough supervenes, with an offensive discharge of phlegm in the morning. If the patient were predisposed to asthma, great difficulty of breathing ensues; or, if inclined to consumption, the fatal malady is hastened in its approaches.

4. The feet swell with a DROPSY, not easily removed, and the abdomen becomes the seat of dangerous watery accumulations. Still oftener, a hopeless dropsical effusion takes place into the chest and about the heart, which labours like a wheel under water. The patient has a distressing cough, is unable to ascend to the second story of his workshop, or climb the lowest hill on his farm; finds himself obliged, at length, to abandon every kind of business, for want of breath; and sits up all night for weeks, lest he should be suffocated by lying down—an event which often happens at a moment when it is not ex-

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pected by those about him. Many remarkable examples of sudden death, from this cause, might be mentioned. I will recite one, which fell under my own observation in this city.

A man with a family, gradually became a sot; and at length fell into a dropsy of the chest. His career of intemperance extended through several years, during which his perversions of temper, and inattention to business, of course led to occasional jarrings between himself and his wife—an ambitious and worthy woman. Finally, he died suddenly, and without any special warning, about the dawn of day, having risen and dressed himself. I reached the house as he breathed his last, and was in no degree surprised, for I had forseen the termination of his career. But some of his neighbors, being ignorant of what might, rationally, be expected, were in a very different state of mind; and before night, it was insinuated that the wife had committed murder. Thus the intoxication of the husband, which imbittered the existence of the wife for years, might at last have brought upon her the horrible reproach of having caused his death, had no professional man been present to make the explanations necessary to her exculpation.

5. Gout is well known to be the offspring of intemperance; but, from the influence of other causes, it is a rare disease in the United States, especially in the West. Rheumatism is, however, a frequent malady; and, in its chronic forms, is often rendered obstinate by intemperance.

6. All drunkards are liable to Sore Eyes. The disease is sometimes of the lids only: at others, of the whole front of the eye-ball, and attended with an offensive discharge. The young drunkard looks upon this malady with concern. He knows it to be the consequence of his intemperance, and fears that it may betray him to society. To prevent this, he resorts to the aid of *bottle* green glasses; but his sagacity is like that of the owl, which thrusts its head into a cavity of the wall where he is confined;—he blinds his own eyes, but leaves those of his neighbors open to his shame; for by this time, his insobriety is disclosed by many symptoms.

7. Another conspicuous sign of intemperance, is the fiery eruption on the nose and upper part of the cheeks, which, by

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a desecration of language, has been called *Gutta-rosacea*, or Rose-drop. Actual drunkenness is not necessary to the production of these pimples; nor, indeed, are they exclusively confined to those who drink. They so seldom, however, appear on any others, that the man on whom they begin to sprout forth, may reasonably be suspected.

8. I have known several drunkards, in middle life, affected with Leprosy (*Lepra Græcorum*). The whole surface of their bodies became red and puckered; the skin cracked open, and a thin acrid matter oozed forth, attended with intolerable itching; finally, immense quantities of scales, resembling those of small fish, were daily formed, and fell off in loathsome showers. I have never known a patient restored from this disgusting malady, while he continued to drink.

9. A much commoner consequence of intemperance, is weakness of the muscular system, with tremors. This condition of the inebriate prevails in the morning, when his strength is that of a child, while his tremors are those of old age. He is unfitted for any employment that requires steadiness of nerve, and when he signs his name to promissory notes, given, perhaps, for debts contracted in consequence of his intemperance, the zig-zag lines betray to all attentive observers, that they will, probably, never be discharged.

10. Epileptic convulsions are a more dreadful effect of his intemperate course. They are by no means uncommon, and often prove fatal; though, in many cases, not until they have induced fatuity.

11. Apoplexy is also a drunkard's disease. It occurs in every stage of his melancholy career, but oftenest in old age. It sometimes proves mortal in a single day or hour, or may terminate in palsy of one side of the body; but the latter malady often precedes the former. Thus the individual, when apparently in health, begins to limp; and, without any obvious cause, gradually, loses the use of one leg. Possibly his friends know not the reason; for he may have been a quiet sot, avoiding convivial scenes, and pursuing a regulated course of secret drinking. He resorts to liniments and patent essences; but the seal of death is upon him, and his halting continues

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to increase, till at length a sudden stroke of apoplexy ends his days, or strikes motionless and senseless one half his body; in which state he may continue to live for years, and to impose on her whom he had sworn to support, and protect, and cherish, the most disgusting servitude,—rewarding her, under the degrading task, with all the outbreakings of a perverted and vicious temper.

12. Intemperance predisposes the body to SPONTANEOUS COMBUSTION. On this point facts have multiplied, until the most incredulous inquirer can scarcely retain his doubts. The bodies of corpulent inebriates, when asleep, have, in several instances, taken fire, by the accidental contact of a burning coal or candle, and all the soft parts have been reduced to ashes, or driven off in clouds of thick smoke. To conceive of the possibility of this revolting catastrophe, we need only recollect the combustible nature of fat, and the still more inflammable quality of ardent spirits, which is composed of the very same materials; and which, being swallowed, daily, in excessive quantities, with reduction of food, may be presumed to alter, to a certain degree, the chemical composition of the body. Meanwhile its vital powers become greatly reduced, and thus render it an easier prey to fire or other external agents.

Lastly. Habitual drinking generates a BAD HABIT OF BODY, which renders the individual liable to violent attacks of disease from slight accidents; and causes various disorders to terminate mortally, which might otherwise be cured. Hence the life insurance of a drunkard, in ordinary health, must always be at a higher premium, than that of the temperate—a fact which is doubtless known to the underwriters. I am aware that drunkards boast of escaping many of the epidemic diseases by which the temperate are assailed. But if this happen at any time, it is because the artificial fever is kept up throughout the epidemic. If they relapse into sobriety, they are more liable to attacks than other people; and when assailed, are far likelier to die. The greater mortality of their diseases, is particularly observable in *young men;* of which I might relate several melancholy examples, but a single instance must suffice. A young man, of this city, addicted to habitual and

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excessive drinking, received a scratch on one of his feet, which, had he been temperate, would have excited but a slight soreness. With a constitution enfeebled and perverted, however, a gangrenous inflammation speedily ensued, and, to the astonishment of those about him, proved fatal within three days!

I leave this unfinished catalogue of bodily ills, to speak of the darker train of mental disorders, engendered by the demon of intemperance. A fit of drunkenness is a paroxysm of delirium—sometimes infuriated, at others mild and idiotic. A drunken man is, always, either dangerous or ridiculous. His senses deceive him, his passions are tempestuous, his judgment overthrown. His actions are senseless and shameless. If good natured, he is a mawkish and insupportable fool; if ill-tempered, a broilsome and abominable monster; who, in a single hour of uproar and aggression, assails the circle which surrounds him, insults the delicate, tramples upon the weak, grapples with the strong, and at length escapes from the scene of blood and bustle, partly sobered by the retaliating influence of sound blows. It must be a powerful agent that can raise such a tumult; and its daily operation cannot fail to carry disorder into all the faculties and affections of the soul.

An early effect of habitual drinking is IRASCIBILITY OF TEMPER. The patient—for such I must consider him—is easily moved; trifles exasperate him, and when they do not come he seeks them. You know not how to meet his wants or wishes. He discards even his own precedents, and reverses the decisions of each preceding day. Thus he is inconsistent, capricious, discontented and impetuous,—unhappy himself, and the cause of inquietude to his family and friends. This morbid irritability is the soil from which his passions shoot up with the energy of the water hemlock and other rank weeds that overrun our vallies. Anger, hatred and jealousy, not measured by the occasions which excite them, contribute to render him contentious and revengeful; or, if the native bent of his disposition was strongly to good nature, he becomes cowardly, whimsical and silly; and inflicts follies on himself and all who come within his reach. Meanwhile his moral principles suffer impairment —his sense of propriety is vitiated—conscience is dethroned—

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and even respect for public opinion is suspended or forgotten. Thus the whole range of moral sentiments is laid in ruins. But the desolation is not limited to his heart—it extends equally to his head. At an early period his senses begin to expeperience injury, and at length his powers of perception are perverted, his observations are made inaccurately, his estimate of the truth becomes erroneous, his memory decays, and his judgment is impaired. In the progress of his intellectual overthrow, his conceptions become disordered, and his imagination excited to an unnatural degree. Strange images arise in his mind, and are believed to be occasioned by external objects, when, in fact, he is almost insensible to all that surrounds him. He occupies himself solely with the creations of his own distempered fancy, which, by this time, afford him abundant employment, for he is now actually mad. At one time he converses with friends who are absent—at another receives mandates from Above; or is enraptured with the sight of imaginary groups of celestial visitants, moving through the air; but in the midst of his bright enchantment, sudden darkness surrounds him, and Satan, with a train of frightful goblins, passes dimly but fearfully before his distempered sight. Terror now arouses him to flight; and, if not confined, he courageously encounters real dangers, in attempting to escape from those which are imaginary. But his flight, of course, avails him nothing; for the frightful images cling to him like the poisoned shirt of Hercules. Exhausted, trembling, and delirious, he is at last taken into custody, and compelled to swallow drugs till his illusions are dispelled. He now returns to reason enfeebled in mind and body—mortified at his own recollections—sunk in the confidence of society, and full of reform. But his passion for drink returns with his strength; and he acts over and over the same ridiculous and melancholy part, till a sudden or violent death, relieves his family from the heaviest burden that fate could lay upon them.

Sec. vi.—Of the Desolating Effects of Intemperance on the Peace and Interests of Society.

Daily observation shows, that in proportion as men become drunkards, they cease to be useful to themselves, to their fa-

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milies, or to society. All, therefore, who fall into habits of intoxication, must be lost to the community if they do not reform. Did the evil stop here it might be borne; it would then be no worse, than if so many individuals had prematurely died—whose places might be filled up by others. But the ills which the drunkard inflicts on himself, and those associated with him, are far from being merely negative. His intemperance often continues for years, during which the injury to his fortune and family, and the inconvenience to society at large, are oftentimes incredible.

When a common labourer becomes a drunkard, his family is soon reduced to the utmost need. The more he drinks the less he works, and the greater are his expenditures. He soon begins to contract debts, and falls into arrears at every tavern, grocery, and still-house in his neighborhood. Meanwhile, he ceases to contribute any thing to the support of his family, and at length becomes entirely dependent on their industry. But all the exertions of his wife and children are often inadequate to the maintenance even of themselves; and the deficiency is made up by purchases on credit. Pay-day too soon arrives, and brings with it the officers of justice, who carry off and sell their scanty stock of household goods. Frost and famine, then, invade the cabin, or the single-rented room, where many of the comforts of a quiet existence once abounded, and the charity of the neighborhood is called forth; but this, in time, becomes exhausted, and the entire family is thrown upon the overseers of the poor, to be supported from the public treasury, at the expense of the industrious and temperate.

If the drunkard be a mechanic, he is either indulgent or tyrannical to his apprentices, whom he makes wayward by his government, and corrupts by his example. He forgets his promises, slights his work, disappoints his customers; apologises with falsehood, perhaps recovers their confidence, but subjects them to new disappointments, till, in disgust, they abandon his shop, and he goes to jail.

If a farmer, he becomes a common pest, frequenting all public meetings, which he often disturbs, and inflicting visitations

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on private families, for the sole purpose of obtaining his favorite beverage. Meantime his farm is neglected and overgrown; his grounds are badly ploughed, and his crops neither planted nor gathered in due season. His fences fall down, and his fields are overrun with domestic animals, who destroy in summer, the provender on which they should subsist in winter. His orchards go unpruned, and degenerate like himself. He wastes his choicest timber, and neglects to plant for those who are to succeed him. His sheds and barracks decay; his slender stock of fodder is rotted by the weather; and his lean and shivering cattle stand exposed to the storm. A neighboring still-house is his market place; and to this are his sons from time to time despatched, to barter a portion of his scanty stores, for that which is to undermine his health, and entail upon them the disgrace of his name, instead of the estate of their ancestors. Well might such a family exclaim with the inspired prophet—

> "Our inheritance is turned to strangers, our houses to aliens."
> "We are orphans and fatherless, our mothers are as widows."

If a merchant, a want of system marks all his affairs. His clerks are undisciplined, his customers treated uncivilly, and his accompts inaccurately or negligently kept. He sells without profit that which should have been kept for a better demand, and purchases that which will never sell. He neglects his business in its current operations, and at a moment when his credit would otherwise suffer, throws himself upon the sympathy of his friends for that, which he most probably will never repay. Unsatisfied with the regular profits of his badly conducted business, he engages, when excited by drink, in wild speculations, draws the credulous into dangerous responsibilities, and, finally, beggars his own family by reciprocating the favor.

If a physician, he reads no more; and soon loses much of what he had once learned. He forgets his professional engagements, and disappoints his patients,—to their great irritation, if not actual injury. Instead of acknowledging the truth, he is tempted to offer unfounded excuses, and thus contracts habits of falsehood. But all this is a trifle compared with other

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delinquencies. He does not recollect from one visit to another, the symptoms and treatment of his patients; and, therefore, can prosecute no systematic or rational method of cure. He observes clumsily, scrutinizes no deeper than the surface, forms hasty conclusions, and prescribes at random. Like a blind Cyclops, he inflicts heavy blows, but knows not whether they fall on the disease or the patient. He writes his prescriptions, however, "*secundum artem*," if not *secundum scientiam;* and, leaving the event with Nature and Providence, seeks for his conscience the quieting influence of another glass.

If a member of the Bar, he is seldom in his office, which he transfers, incessantly, from one part of the city to another, as if in quest of that business which he could only attract and secure, by remaining where he should be found. His places of habitual resort are the coffee house and billiard room; where he wastes the time and intellectual energy which should be appropriated to the service of his clients; thus he is often unprepared for trial; and, they, non-suited or badly defended, must either sustain injury, or seek other counsel. He sometimes even visits the forum drunk; misconceives the points under investigation; provokes the sneers of his brethren; insults the Court; and beneath its indignant rebuke, sits down, or departs, in disgrace, if not in silence.

Is he a statesman? the halls of legislation are defiled—A judge? the bench is polluted—A minister of the gospel? the sanctuary is profaned!

Thus we might travel through all the occupations of society, and not find one on which this vice does not exert a withering influence. But it is around the fireside, withdrawn from the rude world, *at home*—the green house of society—amid the blended sweets of family affection, where love, and peace, and joy, should forever abide, that intemperance displays its gloomiest desolations.

When a son, in early life, contracts habits of intemperance, his prospects are utterly destroyed. Whether he was designed for the farm, for a trade, or for one of the learned professions, the proud hopes which had supported his father and mother

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through years of anxiety and toil, give way to disappointment and deep foreboding. In the anguish of their souls, although they watch over him affectionately, they almost wish he was no more; but he generally lives to break the hearts which once beat joyfully in the contemplation of his pure and simple manners, his budding intellect, and youthful aspirations. Mournful, indeed, is the fate of those parents, who are doomed to see an only son, the natural inheritor of their name and fortune, desert the narrow path of temperance and virtue, for the broad and beaten track, by which the drunkard descends to infamy and ruin.

But the drunkenness of a son is a small matter compared with that of a husband and father; for, of all on whom the dreadful effects of this vice can fall, none are so exposed as a wife and children:—the wife especially, for whose situation, when the habit is confirmed, there is, in general, no remedy. She is the *great* sufferer; and has just claims on the sympathy of every friend. Being the first to detect the intemperance of her husband, inquietude seizes upon *her* mind, while their friends are generally ignorant and unsuspicious. In a mingled feeling of love and pride, she conceals her painful discovery, even at the expense of candour and her own approbation. She hopes to reform him, and, therefore, hides his disgrace; but all her efforts, even when skilfully directed, are too often unavailing. He readily joins her in condemning intemperance; but, in his slight indulgencies, can discover nothing that need alarm her. He can restrain his appetite for drink, and will do so, when it is necessary; but must himself be the judge of of that necessity; and, in general, never makes a decision. Meanwhile his propensity increases by indulgence; and at every successive night, it might be said, in the language of a homely but appropriate maxim, that *he is one day older, and two days worse.* The partner of his bosom, now alarmed, essays all her arts to arrest his mad career. She reasons, expostulates, and holds up to his view the scorn of society, and the wrath of heaven: she reminds him of his schemes of early ambition, and exhorts him to renew the race of wealth or glory: she invokes the spirit of their first love, reviews their wedded

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life, and presses into her service every tender recollection: she presents to him the future, as he once had pictured it, in colors brighter than those which gild the morning clouds; finally, she surrounds him with his own offspring, and bids him look upon the little ones, whom he is shortly to reduce to penury and disgrace. But, too often, no reformation takes place; and she at length feels that he is lost. She must then prepare for the "days of darkness" which are to come. Long scenes of fatigue, anxiety and varied mortification stretch out before her;—she recoils, heart-stricken, from the contemplation, but her path lies through them, and she cannot change it's course. Yet she yields to her destiny with reluctance; for woman's lot is cast upon her marriage, and she cannot give up her hopes of domestic happiness, without a struggle. At length their children come to occupy her whole heart; and, for their support and education, she dooms herself to incessant toil, and every privation. Were she alone, her efforts might be successful; but who does not know, that a drunken father is far worse than none? His whole conduct encourages licentiousness, waste, disobedience and disorder among his children and servants, and thus augments, ten-fold, the cares and difficulties of the mother. Thus, the last bright expectation of former days is blasted, and her spirit is crushed anew; for she now foresees the probable ruin of her children, as well as her husband. They, in fact, grow up in ignorance, in spite of her utmost efforts; and while some of them cling to her in pity, others fall into vice, or wander off; and all are far different in character and fortune from what she once had reason to expect. Meantime most of the early friends of the family discontinue their intercourse, and the few who still visit them, but add to her mortification, by witnessing the degraded manners and conversation of her husband. Their little property disappears, piece after piece; and debts are contracted, until both friendship and charity become exhausted. Thus years of bitterness roll away; and she is finally disenthralled by the welcome, though perhaps violent, death of him, for whose happiness she would once have yielded up her own life.

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This long expected event spreads a solemn gratification through society; and the members of his own family can scarcely conceal from themselves, and from each other, how much they are relieved. His old friends reappear in the funeral procession; but it is to contrast, in under tones, his early with his latter days,—not to bewail his death. The rites of a decent burial being performed, his grave is, generally, ever afterwards neglected by all his acquaintances. Should the pride of family erect over it a monument, inscribed with a catalogue of the virtues which he had long ceased to practice, the misrepresentation serves but to preserve the memory of his failings; and those who reared it, are seldom led to its perusal. They even avoid the spot; and no wife and children are seen blending their tears with the first dews of evening upon its tender grass; but thorns and thistles are suffered to spring up with an energy emblematical of his vices, and the serpent makes its home beneath their tangled branches.

Sec. vii.—Of the means of Curing and Preventing Intemperance.

In all stages of his career, if the drunkard refrain from drinking he of course becomes a sober man; and should no permanent disease have been excited in any organ, he may resume his occupations, and, perhaps, return to the place he had filled in society. But, unfortunately, the habit being once established, he will not, I might almost say cannot, refrain. He repents it is true, but drowns the anguish of his remorse in a fresh libation. His morbid appetite, and the artificial demands of his constitution, are too importunate to be resisted. The flesh triumphs over the spirit; and, as the charmed bird advances, a terrified and trembling victim into the serpent's mouth, so he returns, with horror, to the poison which he knows must at length destroy him. Even in this stage, however, he is, occasionally, cured; either by some alarming event, which carries into his system, both moral and physical, a deep revolution—or, by the associated action of a nauseating medicine, which disgusts him with intoxicating mixtures. But the number thus emancipated is extremely small; and it may admit of doubt whether the successful

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application of a medicinal agent to the cure of drunkenness would not, on the whole, do more harm than good. Such a medicine, it it is true, might save many families from the destruction, which uncured intemperance, in the father, must eventually bring upon them; but there is some reason to apprehend, that *a belief in the existence of such a cure* would tend to diminish the fear of indulgence, in those who are beginning to feel the propensity. Civilians regard the certainty of punishments, as more efficacious than their severity; and, if we open to him, who is commencing a course of drunkenness, the prospect of being cured, at some future time, by the use of medicine, it can scarcely be denied, that a strong inducement for refraining is abolished.

The true and greatest object is prevention. To this every individual should turn his attention in reference to himself—to this should every wife and sister direct her efforts—to this should all benevolent men dedicate their utmost abilities—and on this should the wisdom and power of our legislative assemblies be exercised. I propose to enumerate some of the modes in which a preventive influence may be exerted; but let us first enquire, for a moment, into the moral nature of intemperance.

It has been ranked with vices and crimes, when it should, rather, have been classed with the bodily disorders which, carrying disturbance into the soul, ultimately lead to their perpetration. This estimate of its character is not at variance with that assigned to it in our Holy Scriptures. The criminality of the drunkard does not consist so much in the outrages which he commits when intoxicated, as in not having governed his appetites, and resisted the establishment in his system of a morbid action, which may destroy the foundations of reason, and poison the fountains of moral feeling. While these remain unpolluted he is a free agent; and is criminal if he do not oppose considerations of duty to the cravings of appetite. He shoul l consider the danger of exposing himself to temptation, and the immorality of an indulgence, which all experience demonstrates, must, finally, overwhelm both soul and body. Yet when he has yielded to the tyranny of a morbid appetite, and

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become a sot, he should not be treated with cruelty; for that would neither cure him, nor deter others. On these principles should society rest his case; for, upon them, only, can we construct a rational system of prevention.

The principal elements of this system may be distributed into several groups.

I. ABOLITIONS.

The daily use, in families, of ardent spirits, whether under the name of bitters, slings, toddies, juleps, punch, or grog, should be discontinued.

The absurd custom of offering them to visitors should be renounced.

The license for drinking establishments, under the denomination of groceries, coffee-houses, and confectionaries, should be granted on the principle of suppressing them, instead of deriving from them, as at present, a revenue that shall diminish our taxes.

The use of whiskey by the engineers, artists and operatives in work-shops and manufactories, should be discouraged.

Farmers of wealth and moral influence should agree with each other, not to distribute that liquor among those whom they employ as labourers in harvest time, and on other special occasions, which are most erroneously supposed to require it.

Finally, the practice of drinking ardent spirits at all sorts of public meetings—a practice which interferes as much with the objects for which they are held, as it corrupts the habits of the people at large—should be denounced and abolished.

II. SUBSTITUTIONS.

Very great advantage to the interests of temperance would result from substituting several different beverages, of a stimulating quality, for ardent spirits. The inhabitants of wine countries are generally temperate; and the same remark will apply to those which abound in cider. When cider and spruce beer were the national beverages of New England, her farmers and mechanics were patterns of sobriety. Of the change that has followed, upon the profuse distillation of apple-brandy and molasses rum, I shall leave it with her own moralists to speak. Strong beer and porter are preferable to ardent spi-

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rits; but their daily use leads to corpulence, apoplexy and sottishness. Table and family beer and porterce are far healthier, and never intoxicate. They cannot stimulate a stomach seared with the products of the distillery; but to any other they impart as much excitement as comports with sound health. Even lemonade and sherbet are beverages which, on many public occasions, might be substituted for strong drink. In Paris the men of letters, assembled in large evening parties, often refresh themselves with lemonade only, while for hours they sustain the highest grade of intellectual excitation. Of cordials I cannot speak in terms of commendation. They abound in alcohol, rather mixed than chemically combined with other ingredients; and, while the latter entice us into excessive drinking, the former produces almost every mischief that can flow from ardent spirits. But of tea and coffee, as substitutes for alcoholic compounds of every kind, an opinion too favourable could scarcely be expressed. I am not unaware of the injuries which these infusions occasion; especially in females and young men of studious and sedentary habits; but drunkenness is not of the number, nor are all the evils which they produce to be compared with that single vice. That their daily use, particularly the use of tea, contributes to the prevention of intemperance, there cannot be a doubt. I have not often seen a tea drinker, become a drunkard; and quite as seldom known a man remain temperate. who preferred an evening draught of spirit and water, to that delightful beverage. Of every known stimulus it seems, indeed, to raise in our faculties and feelings the pleasantest animation; and hence its use by so many millions, inhabiting continents the most remote from one another, may be explained if it cannot be fully approved.

III. LEGAL DISABILITIES AND PENALTIES.

Our statute laws should be so framed, that drunkenness would bring on those who practice it, several disabilities, the anticipation of which might contribute to deter thosewho are about to yield to temptation.

1. The drunkard should not be eligible to any office in our judiciary.

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2. When called to serve as a juryman, either party should have the right of challenge for his failing.

3. When subpœnaed as a witness, the party against whom he is to testify, should be permitted to offer proofs to the court and jury, of his habitual intemperance; that they might make the necessary allowances for the mistakes into which he is more liable to fall than sober men.

In all cases the law would proceed on the fact, that habitual intoxication disorders our external senses, and impairs our mental faculties; and that the observations and conclusions of the drunkard, are at no time to be received without distrust of their accuracy. As a witness he might still remain *competent*, and, as it respects his *disposition* to know and state the truth, even *credible;* but his *capability* should be questioned, for it is impaired.

In permitting the habitual drunkard to give testimony, without its being shown to the court and jury that the is such, the law seems to me to be deficient in its usual perspicacity. The man who is frequently intoxicated, ceases at length to be of sound mind; and should be estimated accordingly. When from this cause he falls into manifest derangement, (*Delirium tremens,*) he is no longer competent as a witness; but this state is only the consummation of an intellectual perversion which commenced long before, and, insidiously, deteriorated his powers of perception.

4. The property of the drunkard should be placed in the hands of trustees. If this were done at an early period, it could scarcely fail to contribute to his reformation; and when it did not succeed, both he and his family might, eventually, be kept from becoming public charges. In some of the states, a law of this kind exists; and it should be adopted by the whole.

IV. SOCIAL DISABILITIES AND RESTRICTIONS.

If these were properly and generally imposed, they would contribute signally to the prevention of drunkenness.

No professional man or mechanic should be employed, after he is known to be falling into habits of intemperance.

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Boys should not be placed as students, apprentices or clerks, with intemperate men. This restriction is called for, not less by a regard to the interest of the boy, than the reformation of the inebriate.

Capitalists and master workmen of every kind, should refuse to employ, as operatives or journeymen, all who are given to drunkenness.

Other restrictions of a similar kind might be mentioned, but these will serve as specimens.

V. DOMESTIC RESTRICTIONS.

Under this head I would embrace the influence of the sex. If judiciously and earnestly exerted, it would be very great; but I am sorry to say, that in general it is not. Women, both married and single, seldom frown upon intemperance, in its early, which are its only curable, stages,—however they may detest its confirmed and loathsome shapes. Every young woman of sense and virtue, instinctively shrinks from the idea of marrying a man of suspected integrity, or of manners, vulgar in comparison to her own; and why should she not take exception to that which is still more portentous? To that which destroys both honor and refinement, and brings in its train such woes, as neither dishonesty nor rudeness can originate? If the parents and daughter were not to trust a suitor, who has been once convicted of drunkenness, they would do more to promote the temperence of young men, than all the moralists and declaimers of the age.

The young wife, however, rests under the heaviest responsibility. It is she who has the deepest stake in her husband's habits, and may exercise over them the greatest power. She ought, therefore, to study this subject thoroughly; and take her stand, at an early period, in a spirit of mild but dauntless resolution. Her motto should be that of the Roman moralist: *Resist the beginnings.* The *custom* may be broken up, but the *habit* is indestructible. Whatever is done, should be done quickly; but it must be done skilfully. It is necessary that she should retain her husband's affection, while she opposes his propensity to intemperance,—a delicate, but in many cases not an impossible task. In proportion as she discovers an

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increasing necessity for her interference, she should display a deeper affection,—as her object is not to punish, but to preserve. She must render home more and more attractive to him, and seek to establish with him a closer and dearer companionship. She must not withdraw from her female friends; but, by every practicable means, unite her husband with herself, in the enjoyment of their society; for no man would desire or dare to become a drunkard in the midst of virtuous women. But while she does all this and much more, she ought not, even for a single moment, to forget the object in view; nor so speak or act, as to make her husband suppose her indifferent to his failing. She must never, by word or deed, sanction the daily use of morning drams; nor look, as I am sorry to say, she too often does, with levity on his first frolicksome indulgencies in company. Under every aspect it can assume; by whatever name it may be called; in spite of the most plausible pretexts; and in the face of the most honorable exexamples to bear him out, she must frown upon every excess. When he comes home, in season, but inebriated, she should receive him with sadness and reserve; and let him, if he choose, revenge himself by returning to the scene of his dissipation: He will at last make his reappearance sober. At other times, when he remains away, she should not retire to rest; but, in a feeling of desperation, watch out the longest nights; that he may be touched by the anguish of her spirit, and dismayed by the firmness with which she has resolved to make no compromise with his failing.

If no amendment take place under this simple method, the case is obstinate; and she should prepare for every thing, *but early and silent acquiescence.* It will be due time for this, when all the means within her reach have been employed without avail. Before that state arrives, her activity should be ceaseless; and her efforts directed with all the sagacity she can summons into her service. She must not be discouraged at the inefficiency of one attempt; but pass to another, trying all things, and holding fast to that which is good. Thus rising in her energies with the growth of his vice, and adapting her means as far as possible, to his peculiarities of temper and

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disposition, she must, at different times, and under various circumstances, entreat him with exhortations,—confound him with arguments,—alarm him with consequences,—reproach him with injuries,—overwhelm him with the tears of embittered love! Let her not be alarmed at this advice. She has nothing to fear, and something to hope, from a determined course. Her husband, knowing her to be right, and being conscious that he is wrong, will be compelled to respect her in the midst of his irritation; and, while he might turn with contempt from the sighs of weakness, may cower beneath the remonstrances of indignant love. There is power in the stern virtue of a woman's heart; and no husband, not brutal by nature, or from vice, can set at naught her firm resolves in the cause of duty. When pressed to extremity, her reaction has stricken terror into him, who, till then, never felt alarm. Endowed by her Creator with this peculiar power, the sustaining principle of her sex's dignity, it is her duty to exert it. What! is she a bondwoman, or a beast of burden? Is she to cater for his appetites, and waste her days, in servitude to his unhallowed passions? Was it for this she departed from the mansion of her ancestors, and relinquished the endearing protection of her father and brothers? Was it for this she stood before the altar and exchanged vows of fidelity and love?

Is she not rather in many respects a coequal, with rights and dignities not dependent on the will of her husband? If her sphere of action be more limited than his, is she not a free agent within her proper circle, and should she not fearlessly maintain her interests? God has given her a desire for happiness, and the liberty to pursue it according to certain laws; and should her husband's vices obtrude upon her narrow and rugged way, she must effectually dispel them, or relinquish every hope save that of Heaven.

But great as may be the power of woman, when timely and courageously exerted, we must not rely on it alone, to repress or controul intemperance. A variety of causes tend to paralize her efforts, such as ignorance; native timidity; an indifference to remote consequences; the habit of unqualified

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submission; and, above all, the wide spreading and fatal weakness, of allowing her husband, for a time, to atone for his excesses by redoubled attentions to herself. It is our duty, as men, to look to ourselves and to each other. The practices which, reciprocally, corrupt our lives should be abolished; and in their stead we should adopt those which refine our manners and purify our hearts. We should follow, in reference to vice, the economical maxims, by which we guard against losses by fire and flood. We form mutual insurance companies for our property, why not for the virtues by which that property is to be earned and held? An estate is soon lost, if not guarded by temperance and its associates, industry and economy; and when lost by drunkenness it is gone forever. It is melancholy to witness the folly of poor inconsistent man. To look at his long policies of insurance against the torch of the incendiary, when his property at that very hour belongs of right to other men, who have administered to his intemperance, or profited by the stupidity which it generates. Let us, then, awaken from the sleep of indifference, and open our eyes to the nature and effects of that vice, which, above every other, brings distress and ruin upon the land. There are several causes which contribute either to diminish our aversion to it, or to quiet our consciences under the neglect of the proper means for its suppression.

1. We are accustomed to witness it from infancy, and are, therefore, the less offended by its obscenities, while we grow up with a feint impression, that it is a necessary—or at least an inevitable—evil in society.

2. It connects itself with the private lives and domestic habits of the individuals who practise it; and is thus supposed by many, not to be an admissible object of public censure. But this is an error which ought to be exploded. If the drunkard, sooner or later, require the interposition or the guardianship of society—and this he may do—society has the *right*, if it can devise the means, to *prevent* his drunkenness. He becomes delirious and requires confinement; he abuses or assaults his family, who must seek the protection of friends or of the laws; he wastes his estates, and throws both

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himself and children on the bounty of the commonwealth:—these are but a part of the evils which he inflicts upon the state, and still they are enough to make him a fit subject of both social and political legislation.

3. No vice in general makes a more clandestine progress. In a few cases it is clamorous, but then comparatively harmless—its deadliest forms are silent, and give little alarm. Its march is unobserved; for it comes not with drums and trumpets, but steals upon society like an armed man under cover of the night, and frequently is not discovered till resistance is of no avail.

4. Many worthy men are deterred from interfering, by their want of moral courage. They fear the sarcasms of the drunkard and his dissolute associates. They alarm themselves and each other, with possible consequences; and while they would delight to witness the reform even of a single inebriate, they are unwilling to risk a solitary effort to accomplish it. They are frightened by the magnitude of the duty into its total dereliction. It would, perhaps, be wrong to press such persons into the army of reform, for Nature has given them a commission of neutrality, and her power should be respected.

5. But the great cause of our remissness lies in the excessive energy of the selfish principle. Its power is sometimes almost magical; for, like an inverted telescope, it presents to us the evils of all other persons in reduced dimensions, and enables us to bear them with the most admirable fortitude. The man of inordinate selfishness is never able to find in the community a single evil, which *duty* calls upon him to correct. The sufferings of other people cannot pierce the coat of mail in which his heart is incased. His partnership with society is not one of profit and loss; but of clear gain, if he can make it so. When dividends are to be declared, he is a large stockholder; but if disasters are to be met, or deficiencies supplied, he is no longer a member of the firm. He looks upon society as something created for his use; and delights in its prosperity, whenever that prosperity will contribute to

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his benefit; while he deplores the miseries of others, as far as they may detract from his own interests or enjoyments, and no further. By the most touching events connected with others, his heart is not warmed to the core; and the tender charities which begin to sprout up, soon perish by the frost within. Thus the utmost power of the sun, thaws but the surface of the shores around Hudson's Bay; and the young plants which the famishing adventurer would cultivate, are speedily chilled by the ice beneath.

It is edifiying to observe his conduct in particular situations. Thus at the dead hour of night, when the city is alarmed by the cry of fire, and every noble spirit, whether rich or poor, instinctively hurries to the spot; when the sounds of dismay and lamentation reach the deep recesses of every generous heart, and even the tear of pity starts in many an eye, the selfish man repairs to his chamber window, to observe the course of the wind! If the lurid flames are driven towards his own estates, they melt his heart into the deepest sympathy. He then becomes sorely afflicted for the loss of his suffering neighbors, and brings to their relief his mightiest efforts; but let him feel secure from the evil, and he gazes at the conflagration like a second Nero.

From such men, the philanthropist need expect no aid in his schemes of charity; but this should not discourage him; for a daring minority in the cause of virtue, will make itself felt and feared. Ardour and union must produce important results, in spite of every opposition. The true corrective of intemperance is public sentiment; which should every where be embodied and directed with skill and intrepid perseverance.

Let the habitual use of ardent spirit be discountenanced, both by example and precept: let drunkenness in all its grades and varieties be declared infamous: make it an offence against the laws of society, as it is against the laws of Nature and of God: spurn it with contempt: display the list of its murders: proclaim its guilt to the world; and pronounce upon it, a sentence of perpetual banishment.

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Thus would the "pestilence that walketh in darkness" be stayed in its onward course,—the imprudent warned in time of the danger which surrounds them,—and a vast multitude preserved, from the ravages of its destroying power.

APPENDIX.

ALCOHOL.

Alcohol, according to Saussare, is composed of Carbon, Oxygen and Hydroden, in the following proportions:—C. 51.98. O. 34.32. H. 13.70—100. Its specific gravity is 791 water being 1000; but it can seldom be obtained so pure, and its more common s. g. is 820. It was once supposed that alcohol was formed in the process of *distillation;* but Mr. Brande has demonstrated that it is exclusively the product of *fermentation;* and, therefore, that it exists in every sacharine or sugary solution, which has undergone fermentation. Sugar is indeed the indispensable material out of which alcohol is formed; and it is melancholy to reflect on the misapplication of art, in converting one of the most pleasant, harmless and nourishing substances, in nature, into a bewitching poison.

The following table, compiled from Brande's Manual of chemistry, shews the proportion in which alcohol exists in several different beverages:—

DISTILLED SPIRITS.		
Scotch Whiskey -	54.32	parts by measure in 100
Irish do. - -	53.90	do.
Rum - - - -	53.68	do.
Brandy - -	53.39	do.
Gin - - - -	51.60	do.
WINES.		
Port - - - -	22.96	do.
Madeira - - - -	22.27	do.
Currant - - -	20.55	do.
Teneriffe - - -	19.79	do.

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Sherry - - -	19.17	do.
Lisbon and Malaga, each	18.94	do.
Claret - - -	15.10	do.
Champaign - -	13.80	do.
Gooseberry - -	11.84	do.
Elder - - - -	8.79	do.
MALT LIQUORS.		
Ale - - - -	6.87	do.
Brown Stout - -	6.80	do.
London Porter - -	4.20	do.
London Small Beer -	1.28	do.
CIDER.		
Highest average - -	9.87	do.
Lowest average - -	5.21	do.

From this table it appears that in Brandy, Rum and Whiskey there is, by measure, more alcohol than water, and that Madeira Wine and Port Wine contain nearly half, strong Cider about a fifth, and Ale an eighth as much as they. Thus a botttle of Madeira has in it nearly a pint of proof spirits; a quart of Strong Cider more than six ounces; and a bottle of Ale about four ounces.

The chemists were surprised by the results of Mr. Brande's experiments. Nobody, till then, was aware, that the various fermented liquors contain so large a quantity of alcohol. Their intoxicating effects are certainly not in proportion. This arises from their other ingredients; which give to all of them a nourishing quality, and, to each, effects more or less peculiar. Thus, says Dr. Paris—

"Alcohol, although dilated to the degree of proof spirit, is still too strong for internal exhibition; indeed, where its use is indicated, it is more generally given in the form of wine, malt liquors, or ardent spirits, which must be regarded only as diluted alcohol, although each has a peculiarity of operation, owing to the modifying influence of the other elements of the liquid; thus *Brandy* is said to be simply cordial and stomachic; *Rum*, heating and sudorific; *Gin* and *Whiskey*, diuretic; and *Arrack*, styptic, heating and narcotic; it seems also probable that a modified effect is produced by the addition of various other substances, such as sugar and acids, which latter bodies, besides their anti narcotic powers, appear to act by

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favouring a more perfect combination and mutual penetration of the particles of spirit and water. The effects also which are produced by the habitual use of fermented liquors, differ essentially, according to the kind that is drank; thus Ale and Porter, in consequence of the nutritive matter, and perhaps the invigorating bitter with which they are charged, and the comparatively small proportion of alcohol which they contain, dispose to a plethora, which is not unfrequently terminated by appoplexy; Spirits on the other hand, induce severe dyspepsia, obstructed and hardened liver, dropsy, and more than half of all our chronical diseases; and Dr. Darwin moreover remarks that when they arise from this cause, they are liable to become hereditary, even to the third generation, gradually increasing, if the cause be continued, till the family becomes extinct: with regard to wine, Rush has truly observed that its effects, like those of tyranny in a well formed government, are first felt in the extremities, while spirits, like a bold invader, seize at once upon the vitals of the constitution; the different kinds of wine, however, produce very different and even opposite effects." Pharmacologia, pp. 377—8

This view of the effects of different kinds of alcoholic beverages, suggests to us the propriety of nice discrimination, when we are about to choose one of them as a medicine. On the subject of their relative differences, both physicians and the people, are less informed than they ought to be, and mistakes are, therefore, by no means uncommon.

In their praiseworthy zeal for the suppression of intemperance, many persons have proposed the enactment of a law, prohibiting the distillation of alcohol. But such a law would not be compatible with the genius of a free government; and could never be successfully enforced. Alcohol, moreover, is an agent of extensive and varied utility, and could not, therefore, be dispensed with. In analytical chemistry, it has contributed much to a correct knowledge of the composition of bodies; especially those belonging to the vegetable kingdom. In the arts it performs a service equally important, being the only solvent for a great number of substances which, in civilized life, are highly useful, if dissolved in alcohol; but otherwise useless. Lastly, in medicine its uses are equally important; as it extracts the active principles from a number of native vegetable compounds, and imparts to them increased energy as tonics and stimulants.

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If, however, it were practicable and proper, to suppress the distillation of alcohol, but little would perhaps be gained by so doing. An increased manufacture and consumption of fermented liquors would no doubt ensue; or opium might be introduced, as a substitute, the effects of which would not be less dreadful than those of ardent spirits. Distillation, therefore, must be tolerated, but it should be taxed. This would diminish the quantity of its products; and raise their price to the consumer, which would infallibly diminish their consumption. It is said, however, that the people will not submit to an excise. If this be the fact, it argues but little in favor of their temperance, or their regard for the interests of morality. The people may not submit to an excise unaccompanied by an increased duty on foreign spirits and wines; but with such a duty,—which would keep the rich and poor in the same *relative* condition, by augmenting, equally, to all the expense of drinking,—an excise would probably be borne, and could not fail to produce salutary effects.

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ART. II.—*Formulary for the preparation and employment of many new Medicines; such as the Nux Vomica, the Salts of Morphine, the Prussic Acid, the Strychnine, the Veratrine, the Alkalis of the Cinchona, the Emetine, the Iodine of Mercury, the Cyadine of Pottassium, the Croton Oil, the Salts of Gold, the Salts of Platina, &c. &c. By* F. MAJENDIE, *Member of the French Institute, Titular of the Royal Academy of Medicine and of the Philomatic Society, Physician of the Central Office of Admission to the Hospital and Almshouses of Paris, &c. &c. Translated from the fifth edition, revised, and augmented, by* JOHN BAXTER, M. D. *Member of the Medical Societies of Philadelphia and New-York. With notes and abbreviations. New-York,* 1827. *pp.* 138.

[Concluded.]

VERATRIA. The next, of the new principles on which our author treats, takes its name from the *Veratrum Commune*, or White Hellabore, and the *V. Sabadilla* or Cevadilla, in both of which it exists. It is found, also, in the root of the *Colchicum Autumnale*. Like the others it possesses alkaline properties, and dissolves in all the vegetable acids, with which it forms neutral salts, that are uncrystallizable. Veratria is nearly insoluble in water, but dissolves readily in alcohol and ether. Its operation and effects on the living body may be collected from the following extract:

"*Action of veratrine upon animals.* A very small quantity of acetate of veratrine, injected into the nostrils of a dog provokes immediately a violent sneezing, which lasts sometimes near a half an hour.

One or two grains thrown in the throat determine immediately a very abundant salivation, which lasts some time.

If the same quantity of this substance be injected into any point of the intestinal canal, and the abdomen opened to observe its effects, the intestine will be seen to be much hardened, then to relax, then to contract again, and thus to continue for a certain time. The part of the mucous membrane which is found in contact with the veratrine is inflamed; the irritation spreads and determines vomitings and al-

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vine evacuations. Given in a larger dose, it produces a great acceleration of the circulation and of respiration, soon followed by tetanus and death.

The effects are still more rapid, if we inject under the pleura or into the tunica vaginalis one or two grains of this substance: in less than ten minutes we see death take place after the tetanic phenomena.

The same quantity injected into the jugular vein produces, also, but in a few seconds, tetanus and death. Autopsy of the body shows that, even in this case, the veratrine has exerted an action upon the intestinal canal, the mucous membrane of which is found highly injected. The lungs, also, show signs of inflammation and engorgement. After what has been given above, we see, that this substance, thrown in small quantities into the intestinal canal, produces only local effects, or at least effects confined to the intestinal canal, and that it is necessary that it should be administered in a large dose, or thrown upon parts where absorption is very active, such as the pleura and tunica vaginalis, to produce general effects, which we have just shown are so terrible. M. Andral (son) has published a note on the action of veratrine, in the first number of my Journal de Physiologie.

Action of veratrine on the well and on the sick. The effects of veratrine in large doses have not been observed upon man: without doubt they would be the same as those observed upon animals.

The taste of veratrine is very acrid, but without any mixture of bitterness; it excites, however small the quantity may be that is taken into the mouth, a very abundant salivation.

Although the veratrine is absolutely inodorous, there is an inconvenience, when it is in a pulvulurent state, from smelling it too near. The small quantity carried into the nostrils by the air is sufficient often to promote violent sneezing, which may become dangerous.

Thrown in the dose of a quarter of a grain into the intestinal canal, it determines promptly very abundant alvine evacuations: in a little larger dose, it provokes vomitings more or less violent.

I have given it lately in the dose of 2 grains in twenty-four hours, without obtaining too abundant evacuations. The patient was an old man who had been taken with appoplexy some time before. It is a new proof that the state of the nervous system influences medicines very much in the manner of acting.

After having tasted with care the potion which contained these two grains of veratrine, I experienced for several hours an insupportable acridness in the mouth and pharynx. The impression had not entirely gone the next day. The patient experienced nothing of the kind.

Cases in which the veratrine may be employed. This substance, producing the same effects as the plants from which it is drawn, may be substituted for them, and with much advantage, since we know

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in this case what we are ignorant of in the other, the quantity of active substance which we make use of.

The veratrine answers, moreover, to excite promptly, in cases where it is necessary, full alvine evacutions: given with this intention, it has succeeded very well in certain old men, in whom there existed an enormous accumulation of fœcal matter in the large intestine. In the pharmaceutic preparations of which the colchicum and the hellebore form the base, the veratrine may replace those substances; they will become then therapeutic agents more powerful, more convenient, and more sure. The pills of Bacher, l'eau medicinale d'Husson, the simple tincture of colchicum, will cease to be remedies unbelieved in and too often complained of by practitioners.

The following are some formulas which we have written out, to replace those of which we have just spoken:

Pills of veratrine. ℞ Veratrine, 1-2 grain,
Gum arabic and syrup of gum, a sufficient quantity to make 6 pills of 1 grain each. One of these pills may first be given, and if purgative effects are not obtained, 3 may be given in a day; they will replace with advantage the pills of Bacher.

Tincture of veratrine. ℞ Veratrine, 4 grains,
Alcohol, 1 ounce.
This tincture is administered in the dose of 10, 15, 20, and 25 drops in a cup of good drink. It may be given internally with advantage, instead of the tincture of colchicum, in dropsy, in leucophlegmasia and anasarca; and, to the exterior, by friction, in those same diseases and in gout.

Solution of veratrine. ℞ Sulphate of veratrine, 1 grain,
Distilled water, 1 ounce.
This solution may replace the l'eau medicinale d'Husson.

Ointment of veratrine. ℞ Veratrine, 4 grains,
Axunge, 1 ounce.
This ointment may be employed externally in cases of chronic rheumatism, anasarca, and in gout." pp. 57—58—59—60.

We have not prescribed Veratria or its salts, except as it exists in the vinous tincture of Colchicum. That preparation we have repeatedly employed in bronchial inflammation, and can testify to its efficacy. After bloodletting, it speedily diminishes the frequency and force of the pulse, with an abatement of dyspnœa. It may be given alone, in a concentrated state; but is more efficacious, when added to a dilute solution of tartarized antimony, with laudanum.

Hydrocyanic or Prussic Acid. Of the whole Materia Medica, this is one of the most deleterious and decomposable

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substances. To these two characteristics we may ascribe its limited employment by the profession at large; to whom it has been so strongly recommended by several distinguished physicians of France, England, and the United States. Its tendency to decomposition is so great, as to preclude all certainty as to the quantity actually administered; and a knowledge of this, has often deterred both physicians and patients from its use. Those only who live in the vicinity of the laboratory can, indeed, employ it with safety and success. When diluted with distilled water, we have found the difference in strength so great, between a recent solution and one a few days old, as to constitute a serious embarrassment in practice. One of our patients, in fact, came nigh being injured, by taking no more of a solution, just prepared, than she had been accustomed to take of one that had been kept a week or two. It produced instantaneous reduction of muscular energy, to such a degree, that she nearly fell upon the floor. Notwithstanding this most striking effect of the Prussic Acid, we have found it, in moderate portions, to increase the excitement of the nervous system, and raise the spirits of dyspeptic patients.

Of the potent agents which the laboratory has sent forth, in these latter days, not one has given rise to so many volumes of reports, as that under consideration. We do not believe, however, that it has ever cured either Dyspepsia or genuine Phthisis Pulmonalis, the diseases for which it has been most lauded. This is the result of our trials with it, in no inconsiderable number of cases—the medicine being recently and accurately prepared, by the ingenious Dr. Best, late lecturer on Pharmacy in Transylvania University. In both maladies, however, and in many imitative phthisical disorders, we have found it a valuable palliative. Few substances exert so much influence over that morbid sensibility, especially of the animal system, which constitutes so prominent a circumstance in Dyspepsia, and many sympathetic affections of the lungs and muscles of respiration. Some of these cases assume a threatening aspect; and are greatly relieved

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or even cured, by the Prussic acid. Beyond this, its powers have not appeared to us to extend.

From its efficacy in subduing unhealthy sensibility and irregular action in the muscular system of animal life, we have been induced, in obstetrical practice, to employ it for *After-pains*, but could not discover that it exerted an influence on the contractions of the uterus. Its effects on the muscles of organic life, seem, indeed, to be inconsiderable.

The following quotation contains a summary of what our author has been able to collect, relative to the medicinal employment of this powerful agent:

"*Cases in which it should be employed.* The prussic acid, weakened, as we are going to show, is employed with success in all cases where the irritability of the pulmonary organs is morbidly increased: thus it is used advantageously in the treatment of nervous and chronic coughs, in asthma, whooping cough, in the palliative treatment of phthisis. A great number of observations now induce the belief that it can procure a complete cure when the disease is yet in its first degree. In England, it is employed with success against the hectic cough, sympathetic of the affections of another organ, and against dyspepsia. Mr. Elliotson, at the hospital of St. Thomas, in London, and in his particular practice, has employed the medicinal prussic acid; it was prepared according to the process of M. Vanquelin, which we have given above; he has reported more than forty cases of dyspepsia, with or without vomitings, and accompanied with sharp pains in the epigastric region, and of pyrosis, which were cured by the use of the medicinal prussic acid. This same physician cites a case of painters colic, in which Dr. Prout gave the prussic acid and procured instantaneous relief. Mr. Elliotson has also administered the hydrocyanic acid in a great number of affections of the chest; he has almost constantly obtained a cessation of the cough which fatigued the patient. Externally, the medicinal prussic acid, employed in lotions for different diseases of the skin, has not produced in the hands of Mr. Elliotson very marked effects; however, Dr. Thompson assures, that he has used it in lotions, with constant success, to diminish those itchings and burnings so fatiguing in cutaneous diseases, and to have cured several kinds of dartre, especially several persons affected with pimples on the face. (Acne rosacea.) M. Jacob Bouchenel has published an interesting memoir, on the use of the prussic acid in the treatment of chronic pulmonary catarrh, a memoir in which this physician reports four cases of chronic pulmonary catarrh cured by the hydrocyanic acid. The author closes by saying, that this remedy, employed in small dose, has no more inconvenience than a common draught; that the acute

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state of catarrh is not proper to use this medicine in, and that the success is more certain when antiphlogistic means are resorted to before employing the hydrocyanic acid. M. Bouchenel has also employed the prussic acid in a case of phthisis; but he attained only to calm momentarily the cough, which leads him to doubt whether the prussic acid has really procured the cure of phthisis. We repeat here, that we have obtained the cure of persons having all the signs of phthisis in the first degree, and even more advanced. It is not a chance assertion on our part.

In Italy, the medicinal hydrocyanic acid is used to calm the too great irritability of the uterus, even in cases of cancer, and to moderate the activity of the heart in almost all sthenic diseases.

Professor Brera speaks very much of the happy effects of prussic acid in pneumonia; he advises it also against rheumatism, and as a vermifuge. It is since the professor has employed the hydrocyanic acid in diseases of the heart, that Dr. Maclead administered it in these same diseases; (Bullet. des Sciences Med., Feb., 1824.) He states that he has calmed by this acid nervous palpitations, those especially which seem to have a derangement of the digestive organs for the cause; he has also used it as a palliative in some cases of aneurism of the heart. He has never carried the dose beyond 28 drops in twenty-four hours, and he has seen in no case serious accidents result from the administration of this remedy.

Dr. Frisch, physician at Nyborg, in Denmark, has calmed intolerable pains, caused by cancer in the breast, and which had resisted all antispasmodics, by washing the surface of the cancerous ulcer with dilute medicinal prussic acid. He has also employed this remedy usefully in several cases of phthisis. He cites a case of cure. Dr. Guerin, of Mamers, has lately employed with success the medicinal prussic acid in two cases of cerebral fever." 64—65—66.

CYANIDE OF POTASSIUM AND HYDROCYANITE OF POTASH.—The perishable constitution of the Hydrocyanic or Prussic Acid, has suggested to the chemists, the value of some other and more permanent compound, of which Cyanogen should be the active ingredient. This has been discovered or invented, by Messrs. Robiquet and Villerme; and consists in the union of Cyanogen with Potassium, constituting a Cyanide of Potassium, which kept dry undergoes no change. Exposed to moisture, or dissolved in water, the Hydrocyanic Acid and Potash are formed, and there results a solution of Hydrocyanite of potash. The effects of these substances, as far as they have been ascertained, are stated by one author in the following paragraphs:

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Action of the cyanide of potassium and of the hydrocyanate of potash upon other animals and upon man. Messrs. Robiquet and Villerme have made experiments upon animals in our presence.

The action of the cyanide of potassium was such, that with the tenth of a grain of that salt a linnet perished in one minute; a little less than a grain killed a guinea pig in two or three minutes.

With the hydrocyanate of potash, a small drop not containing more than an hundredth part of a grain of cyanide in solution, made a cock linnet fall dead in about half a minute. A half gros, containing 5 grains of cyanide, killed a large sized dog in 15 minutes.—The symptoms of poisoning were similar to those produced by the hydrocyanic acid. There has been no occasion to study on man the symptoms caused by this substance.

Manner of employing it. The cyanide of potassium is dissolved in eight times its weight of distilled water, it is transformed into hydocyanate of potash. The cyanide mixed with water in this proportion may receive the name of the medicinal hydrocyanate of potash.

We may then, without danger, give this hydrocyanate in the same doses as the medicinal prussic acid, and introduce it into the same preparations as those which are pointed out for prussic acid.—We may, besides, render it entirely independent of the action of the small portion of alkali contained in the cyanide, by adding a few drops of some vegetable acid, or by prescribing it with an acid syrup; from this will result the eminent advantage of putting the prussic acid more uncombined.

If the cyanide of potassium be put into a draught instead of the dydrocyanate of potash, we must commence with a quarter of a grain, and increase gradually to a grain, dose which has already been surpassed by some physicians." pp. 69—70.

Cyanides of Zinc and Iodine. Two other compounds of Cyanogen have been offered to the profession, as substitutes for the Prussic Acid. These are the Cyanides of Zinc and Iodine. Neither of them appears to be as energetic in its action on man, as the preparations of which we have spoken; but their effects remain to be ascertained.

Solania. This is the deleterious principle of the genus of Solanum, or Night-Shade. It was discovered by Defosses, a French apothecary, in the leaves and berries of the S. Nigrum (deadly night-shade) and S. Dulcamara (bitter sweet). The berries of the former contain it in abundance, in union with malic acid. The other species of Solanum have not been examined; but it probably exists in all the *active* members of the

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family. The following are its therapeutick properties, as far as they have been ascertained.

"*Action of solanine upon animals.* This substance, introduced in the dose of 2 to 4 grains into the stomach of a dog or cat, excites violent vomiting, soon followed by drowsiness, which lasts several hours.

A young cat was able to support without dying 8 grains of this substance. After violent vomiting, he experienced strong sleepiness, which lasted thirty-six hours.

Action of solanine upon man. If a small quantity of solanine is swallowed, a strong feeling of irritation is perceived in the throat.—Held in the mouth, the solanine gives a nauseous taste, slightly bitter, but which becomes very much so if the substance is dissolved in a little acetic acid.

Of all the salts of solanine, the acetate is the only one whose action has been tried on man. In the dose of a quarter of a grain, it produces nausea, but the tendency to sleep is not observable.

After what we have just said, we see that the solanine, like opium, may produce vomiting and sleep; but its emetic properties appear more developed than that of opium, while its narcotic properties are evidently much less.

Cases in which they may be employed. The solanine has not yet been tried upon the sick, but it may be used in cases where the extract of night shade or that of bitter sweet are indicated." p. 79.

Delphinia. A tincture of the seeds of the garden larkspur Delphinium Consolida et staphisagria, has long been in use among the people, to destroy lice, (Pediculi) an evidence that they possess deleterious powers. In 1819 M. M. Feneuille and Lassaigne discovered in them an alkaline element, on which their effects appear to depend. It has not yet, however, been made the subject of therapeutick investigation. In the United States there are several native species of Delphinium, which merit the attention of our pharmacopolists.

Gentiania. Two chemists, M. Henry and M. Caventou, at the same time, but distinct from each other, succeeded in extracting from the roots of the common Gentian (G. lutea) an active, bitter principle. Its alkaline properties are but feeble. Its best solvent is ether. It is yellow, inodorous, and has the aromatic bitterness of the gentian in a decided degree.

"*Action of gentianine upon man and other animals.* Some trials which I made, taught me that gentianine has no poisonous qualities

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Several grains of this substance injected into the veins, produced no apparent effect. I myself swallowed two grains dissolved in alcohol, and only experienced an extreme bitterness and a slight feeling of warmth at the stomach.

Mode of employing gentianine. The tincture is the preparation which should be most frequently used. It may be prepared from the following formula:

Tincture of gentianine. ℞ Alcohol at 24°, 1 ounce,
Gentianine, 5 grains.

This tincture replaces with success the elixir of gentian, and is employed in the same circumstances.

Syrup of gentianine. ℞. Syrup of sugar, 1 pound,
Gentianine, 16 grains.

It is one of the best bitters which can be used in scrophulous affections." p. 84.

Iodine. This simple substance, discovered by Curtois in 1813, has attracted an uncommon degree of attention. It was first detected in the sea weed which is used in the manufacture of soda; but has been since found in a great variety of marine plants and animals—such as shell fish and sponges; it exists likewise in sea-water, and in several mineral waters. It is remarkable, therefore, that it should not have been sooner discovered. Of mineral springs, the salino-sulphurous most constantly afford it. In the Western States these waters are abundant, and probably all contain this substance. None of them have yet been analysed with care; and they offer, therefore, an interesting subject of inquiry to such of our physicians, as are qualified for chemical researches. We should be much gratified to make public the results of their analyses.

Iodine, like Cyanogen, unites with Hydrogen and forms an acid, the Hydriodic, with which several neutral salts are formed. It also combines with Oxygen, and constitutes the Iodic acid. In sea and mineral waters, iodine exists in the state of a hydriodate of potash, and perhaps also of soda.

The interest which Iodine has excited among the physicians of the United States, will justify us in the following extended extract from M. Majendie's work:

"*Action of iodine upon man and other animals.* A little while after the publication of his handsome work on iodine, M. Gay Lussac sent me a certain quantity, in order that I might study its effects

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upon animals. I made immediately some experiments, in which I introduced the tincture of iodine into the veins, in the dose of 1 gros, without any apparent effect.

I made also several dogs swallow it, who vomited, but experienced no other effect.

Seeing this innocuity of the new substance, I swallowed myself a tea spoonful of this tincture, an there resulted nothing but a disagreeable taste, which remained several hours, but finally dissipated by little and little.

I have seen lately an infant for years old, to whom, by mistake, was given a tea spoonful of the tincture prepared by M. Pelletier; its lips and tongue were colored yellow, but no accident followed this event.

Besides the therapeutic properties of iodine, one of its most remarkable effects, when the employment has been continued for some time, is the diminution of volume of the mammary glands in woman and of the testicles in man.

Cases in which the preparations of iodine are employed. M. Coindet, physician at Geneva, the first who employed the iodine as a remedy; he used it in the treatment of goitre with very marked success. These attempts have been repeated since, as well in France as in Swisserland, by several physicians; and it seems to result, from their observations, that we have now in iodine an efficacious remedy against a disease which has sometimes shown itself so obstinate.

Although we ought especially to expect success from the employment of iodine when the goitre is recent, and in individuals who have not yet reached an advanced age, however, we have seen it dissipate old goitres, hard and voluminous; but, as in this case the treatment is necessarily longer, there may result from the long continued use of iodine an action injurious to the stomach: to remedy this inconvenience it has been sought to introduce iodine by another way, by that of frictions.

If new examples were necessary to prove to practitioners at this time the advantage of simple remedies over ancient formulas, we could cite the cases collected by Mr. William Rickwood, of goitres cured by iodine, while we have before used burnt sponge, but with only a partial success. (Lond. Med. and Phys. Journal, Aug., 1823.) Among the facts reported by this physician there is a curious one; it is the cure of a goitre, or at least a very considerable diminution of one, in a female aged 70 years.

Iodine has been employed in the treatment of scrophula with an equal appearance of success: a great number of cases have just now confirmed the utility of this remedy in that disease. M. Baup has cured, by the use of iodine, old scrophulous ulcers. I have myself obtained, by this means, the resolution of very considerable glandular enlargements.

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In the report on the Polyclinic institute of Berlin, for the years 1820, 21, and 22, Messrs. Hufeland and Osann, after having reported several cases of goitre cured by the tincture of iodine, and the hydriodate of potash, announce that some advantage has also been drawn from the same prepations of iodine, over scirrhus and carcinoma of the uterus. Dr. Wagner asserts that he has obtained good effects from iodine in the tretment of a tumor which he regarded as cancerous, and which was seated near the jaw. Doctor Hennemann (Journal der pratischen heis Kunde) has also reported a case in which it seemed in fact that iodine had had a remarkable influence on a cancer of the womb arived at the last stage; there was a communication between the vagia and the abdominal cavity, so that a cure could not take place; but the cancerous affection, says Dr. Hennemann, was much ameliated.

M. Zinck, in 1823, read to the National Society of Lausanne, a memoir in which he reports two cses of white swelling cured by the preparations of iodine.

In the memoir of M. Gardiner on iodine, there is found a similar case of cure, which was communicated to him by Prof. Maunoir, of Geneva. A child had a considerable white swelling of the knee.—There was incapacity to walk without crutches: blisters, leeches, and resolvents of all kinds had been employed; friction was made morning and night on the tumour with a portion of iodine ointment as large as a nut; the tincture of iodine in the dose of 1-2 a grain at most was given internally. After some time the cure was complete.

M. Zinck has again published two memoirs (Journal Complimentaire, April and May, 1824) upon the use of iodine used internally, in which he has shown that the action of iodine prolonged for too long a time may bring on inflammation of the stomach; but this accident has only taken place from the abse which the patients made of it from the hope to obtain a more prompt cure, or even to prevent the evil.

Lately the use of iodine has spread in England, where it has been used but by a very small number of Physicians. Dr. Gairdner has published an interesting memoir on the effects of iodine upon the animal economy, and on the advantages to be derived from it in the treatment of goitre, scrophula, and tuberculous affections of the lungs and abdomen. We would observe that it is very rare that iodine causes the serious accidents that are attributed to it by Dr. Gairdner: it is necessary that it should be administered with as little rule as it was by the young students of whom the author speaks, who wished himself to cure his sister of a goitre which she had. Dr. Baron, of London, appears to have administered iodine with some success in the treatment of scrophulous phthisis, and some other tuberculous affections. These first attempts require that we should collect new facts, that we may know to what point we may calculate upon the efficacy of iodine, when phthisis is but little advanced.

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The late Mr. Haden, in his English translation of our Formulary, has also reported a case of phthisis, presumed cured by iodine.

M. de Fermon obtained very good effects upon a young woman with phthisis, by the following potion, which was taken a tea spoonful at a time every hour:

℞. Lettuce water,	4 ounces,
Solution of hydriodate of potash,	15 drops,
Medicinal prussic acid,	10 to 15 drops,
Syrup of marshmallows,	1 ounce,

Or the prussic acid and the syrup of marshmallows may be replaced by cyanic syrup.

This same Dr. Baron, whom we have just cited, reports in his Treatise on Tuberculous Diseases, a case of encysted dropsy of the ovary, in which the use of iodine was followed by the most prompt and most marked success. Dr. Gairdner, who cites this fact in his memoir upon iodine, and says that he had also advised it with great success in a similar case, prescribed it in several cases of acites, but obtained no good effect.

M. Coindet praises iodine as a powerful emmenagogue: this last property has been confirmed by the observations of Prof. Brera (Saggio Clinico sull' Iodio, Padoue, 1822) and of some other physicians.

M. Brera has even administered the preparations of iodine in the treatment of a much larger number of patients than M. Coindet has. To the cases of goitre and suppression of the menses cured by iodine, he has joined several cases of glandular indurations, tabes mesenterica, chronic dysentery, hemoptysis succeeding suppression of the menses, laryngeal phthisis, fluor albus, syphilitic enlargements, the cure of which he attributes to this same remedy. It may be that M. Brera too often joined other substances with the preparations of iodine, to which last he attributes the efficacy. We must not, therefore, employ these but with caution in similar cases. Further, M. Brera is not the only one who has given iodine for tabes mesenterica. M. Callaway, a distinguished English surgeon, has derived from the use of tincture of iodine the most happy results in scrophula and in enlargements of the mesenteric glands.

Iodine has been used lately for the treatment of syphilitic bubos and of blennorrhagia.

M. Richond, (Archiv. Gen. de Med., March, 1824, p. 322,) military physician of the hospital of Strasbourg, employed it with advantage in the treatment of these two diseases.

This physician gives generally in the morning 15 drops of the tincture, 20 to 25 the second, and 30 the third day. He commences, then, to give 15 drops at night, and augments in that way up to 30 drops morning and night. This dose is continued three or four days: finally, he carries the dose to 50 and 55 drops morning and night. If there be no irritation of the stomach, the patients experience sometimes a sentiment of burning in the pharynx; but this sensation soon dissipates: there are at times slight colics,

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headache, dryness and redness of the tongue; then suspend it for a short time. The dose most proper is 30 drops morning and night. M. Richond has only treated soldiers thus, the most part robust and little excitable.

Messrs. Gimelle (Revue Medicale, v. 7, p. 249) and Sablairolle have reported cases which will confirm the properties which Messrs. Coindet and Brera attribute to iodine against leucorrhœa. M. Gimelle has even cured dartres, by means of preparations of iodine. M. Eusebe de Salle has treated with success, by frictions of ointment of hydriodate of potash and iodine in pills, chronic enlargements of the testicles and chronic enlargement of the liver, which the English call "liver complaint," and which arise from the residence of Europeans in equatorial countries.

A veterinary physician, M. Roupp, attached to the depot of Stallions at Abbeville, wished to make use of the hydriodate of potash in the treatment of the glanders: he gave from 9 to 14 grains of the hydriodate of potash, for a month, to a horse, and had him rubbed with an ointment made with this salt This first attempt was without effect; it seemed even to augment the fever: perhaps the dose was too powerful. In the animal there was a too considerable disorganization of the lungs, of the pituitary membrane and of the bones which it covered, to hope for a cure. (Jour. Gen. de Med., April, 1824.)

At the end of the year 1822, the Geneva and Swiss physicians were much out of conceit of the advantages which they had at first thought to have reaped from the preparations of iodine: they pretended that serious accidents had followed their use, such as chronic inflammation of the stomach, and considerable and rapid diminution of all parts of the body, particularly of the breasts. We have given the reason of it. I have never seen such accidents, at least if the doses have not been too large; but this is no small reason to be very circumspect in employing the new preparations.

Mode of employing iodine.

Tincture of iodine. ℞ Alcohol at 35°, 1 ounce,
Iodine, 48 grains.

This tincture should not be prepared long before it is used, because it soon deposits the crystals of iodine; there is reason to fear, besides, that the iodine might deprive the alcohol of part of its hydrogen, and thus be converted into iodureted hydriodic acid.

The tincture of iodine has been used with much success in the cure of goitre; it has also been employed in the treatment of scrophula, but not so often as the two following preparations:

The tincture of iodine is given to adults in the dose of 4 to 6 drops, 3 times a day, in a half glass of sugar and water; it may be augmented progressively up to 20 drops, three times a day; 20 drops contain 1 grain.

Iodureted sulphuric ether.

℞ Sulphuric ether, 1 grain,
Pure iodine, 6 grains.

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Thirty drops contain 1 grain of iodine. Patients hardly support more than 10 drops at a time.

Solution of the hydriodate of potash.

℞ Hydriodate of potash, 36 grains,
Distilled water, 1 ounce.

This solution is still capable of dissolving iodine, and thus to form an ioduretted hydriodate of potash.

If it is wished to make a solution called Coindet's, it is sufficient to add 10 grains of pure iodine to the solution of hydriodate of potash indicated above.

These two preparations, the mode of administration of which is the same as that of the tincture of iodine, are employed like that in the treament of goitre and scrophula; in the latter case there is usually associated some medical tonic.

Ointment of hydriodate of potash.

℞ Hydriodate of potash, 1-2 gros,
Ungt. simplicis, 1 1-2 ounce.

The dose of this ointment, which is used in friction, morning and evening, in goitre and enlarged scrophulous glands, is a demigros for each time. In about eight days it may be carried to 1 gros, and even more, according to the age of the subject and the extent of the tumour.

Sometimes, by this means, a complete resolution is obtained of tumours which the saline solutions have not entirely dissipated.—This ointment has been employed in divers cases of enlargement of the testicles, which have not yielded to the influence of other means; sometimes also, the treatment by friction does not produce a complete cure, and often it is necessary to combine the two means. In general, in the treatment of scrophula, more advantage seems to be derived from the use of saline solutions.

When the method of friction is used in the treatment of goitre, it is well sometimes, to aid the action of iodine by emollient fomentations or leeches. Sometimes, after the first frictions, the goitre, so far from softening, becomes hard, and slightly painful; the application of a few leeches ordinarily causes this local irritation to disappear, and the effects of iodine are then shown in a very marked manner.

This ointment may be made more active by adding 10 or 15 grains of pure iodine, which forms what is called the ointment of ioduretted hydriodate of potash." pp. 90 to 99.

We have administered Iodine to a number of patients afflicted with different maladies; but are not prepared to speak of its powers in the language of eulogy. Our expectations, in fact, have not been realised. The absorption of the mammæ and testes, which its long continued use is said to have occasioned, has not occurred in our practice. Nor has it pro-

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duced other sinister effects, although administered to a variety of persons in liberal quantities. When not sufficiently diluted, it occasions gastrodynia, without vomiting or stupor; and in large doses would, no doubt, excite acute gastritis; for when externally applied, its irritating effects are extremely violent. We have found an ointment containing only a fiftieth part of its weight of iodine, to smart the skin intolerably, and produce a fiery papular eruption. This is the strength of the ointment of iodine and calomel of Coindet; which, according to our experience, is at least twice as strong as is adapted to practice in this country. We have recommended the tincture of iodine in the scrophulous affections of the negroes of Kentucky, but did not find it successful. Our trials have not, however, been numerous. In a case of chronic bronchitis, attended with dilatation of the cavities of the heart, it afforded some palliation. The patient, a medical gentleman of correct observation, at first took the tincture, and became well acquainted with its taste. At a subsequent time, he used the medicine in substance, in the form of pills, when he recognised its flavour in the mucous which he expectorated—an evidence of its absortion and elimination from the lungs, like the odorous parts of garlic. We have mentioned in the eighth number of the Western Medical and Physical Journal, the beneficial influence of our medicine in a case of scrophulous opthalmia. No return of the malady has since taken place. The same child had a scrophulous tumour of the cheek, which began to suppurate before it entered on the use of the medicine. The suppurative action continued, but the abscess never broke, and seems likely to heal by absorption and granulation. The medicine was used both internally and externally. From the alledged power of Iodine in promoting the absorption of solid parts, we have been induced, in the practice of the Cincinnati Eye Infirmary, to administer it for the removal of the films and nebulæ, which give opacity to the cornea, after violent opthalmias; but its effects, in that way, were not very obvious. We have directed our medicine in one case of irritable testis, of several years standing, unconnected with syphilis or gonorrhœa. For a

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time it seemed to afford some mitigation; but the ultimate benefit was inconsiderable. To a woman with stricture of the œsophagus, we have administered the Iodine for four months, without any abatement of the malady, or material change in her general health, which was delicate. This patient has a slight enlargement of the thyroid gland; which suffered no diminution during the use of the medicine. In common with some of our brethren, we have, in a spirit of empiricism, directed the tincture of iodine in several other cases, agreeing in little else, than this obstinacy under ordinary plans of treatment; but, on the whole, have not obtained very encouraging results.

The remaining articles of this work are Lupuline, Croton oil, Piperine, Urea, Euphorbia latyris, Lactucarium, Gold and Platina, some of which present matters of interest; but the extent which our review has already attained, admonishes us to come to a termination.

We commend the publication of M. Majendie, for we are not among those who disapprove of the search after new medicines. To look out for new emetics or cathartics, would, it is true, be a work of supererogation; but our therapeutick armories are not limited to the means of promoting evacuation. Many of our most useful articles, are those which produce no sensible effects on the excretory organs, of which Opium, Bark, Arsenic, and Mercury under certain modes of administration, may be mentioned as examples. Even the most beneficial effects of Antimony are, in many cases, almost independent of its evacuating operation. Diseases, on the whole, have a more specific character, than many theorists and system mongers are inclined to admit; and we want a greater number of medicines, possessed of something like a specific power, in reference to particular morbid actions. Such a power, as the Sulphate of Quina, and the Deuto Chloride of Mercury, possess over ague and fever and syphilis. That the catalogue of this class of remedies (if we may be permitted to class them on the principle of their relations to particular maladies) will be greatly augmented, we entertain no doubt; and it is, perhaps, chiefly to chemistry that we must look

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for the acquisition. No other science is so fertile in both discoveries and creations; and they equally administer to the progress of clinical medicine. It reveals to us things which would forever have been concealed, such as Morphia, Quina and Antimony, while it may fairly be said to create those sulphates and tartrates of these natural productions, which are so precious to us in the practice of medicine. The number and variety of these creations are absolutely without any limits, as the chemists may increase them at pleasure, by the skilful junta-position of known elements. We regard it, therefore, as a justifiable anticipation, that the Materia Medica is destined to be enriched with new articles, until its powers shall far transcend the imperfect resources of the present time.

The translator, Dr. Atlee, has not substituted, as we think he ought, the English for the French weights and measures, throughout the body of the work; but given an appendix of comparative tables. For the use of those who may not understand the subject, we shall subjoin them.

TABLES,

GIVING A COMPARATIVE VIEW OF THE FRENCH WEIGHTS AND MEASURES WITH THOSE USED IN THE UNITED STATES.

French grains.	*English* grains.	*French* grains.	*English* grains.
1	0,8203	6	4,9223
2	1,6407	7	5,7427
3	2,4611	8	6,5631
4	3,2815	9	7,3835
5	4,1019	10	8,2030

grain			*English grs.*	*Troy weight.*
1		=	0,8204	
72	*gros*	=	59,0703	or ℈ij. 19,0703 grs.
576	8 *ounce*	=	472,5625	or ℥vij. 52,56 "
9216	128 16 *pound*	=	7561,0000	or ℔xv. ℥vj. ℈, "

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The above French division is that called *pois de marc*, being that formerly used in France. It is this measure that is used in the body of this work. The English division to which it is reduced is that of *troy weight*.

I have given below the new French divisions, reduced to troy weight also.

French division.		*Troy weight.*						
		grains.						
Milligramme	=	,0154						
Centigramme	=	,1544						
Decigramme	=	1,5444						
Gramme	=	15,4440	pd.	oz.	dr.	sc.	gr.	
Decagramme	=	154,440	0	0	2	1	14	44-100
Hecatogramme	=	1544,400	0	3	1	2	4	4-10
Kilogramme	=	15444,023	2	8	1	0	14	

The French litre contains 2,1133 English pints, and the French pint 2,0171 English; so that the difference between them and the English quart measure is but trifling, and they may be used as synonymous. The same may be said of their gros and our drachm.

Troy weight.					*French grains.*	
grains.						
1				=	1,218	
20	*scruple*			=	24,378	
60	3	*drachm*		=	73,135	1 gros. 1,135 gr.
480	24	8	*ounce*	=	585,083	1 oz. 9,083 gr.
5760	288	96	12 | 1 *pound*	=	7021,	12 oz. 1 gros. 27 gr.

ART. III.—*Observations and Experiments on the Efficacy and Modus Operandi of Cupping-Glasses, in preventing and arresting the effects of Poisoned Wounds. By* CASPAR WISTAR PENNOCK, M. D. *Philadelphia*, 1828. *pp.* 20.

The experiments and conclusions of Dr. Barry, on the influence of cupping glasses, in preventing the deleterious effects of poisons introduced into wounds, are now so generally known to our readers, that we consider it unnecessary to state them in our notice of this little work. Dr. Pennock's design, was to ascertain their correctness. For this purpose, he employed concentrated hydrocyanic acid, strichnine, upas tieute, and arsenious acid. His experiments were performed on rabbits, and seem to have been conducted with the requisite

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skill and circumspection, in the presence of several medical gentlemen. The following are his conclusions:

First. The usual effects of poisoned wounds cannot take place during the absence of the atmospheric pressure procured by the application of cupping-glasses.

Second. Such application does not arrest the deleterious action of the poison by withdrawing it from the exposed surface; on the contrary, the fatal effects are wholly prevented, though not a particle of the substance employed has been abstracted. In proof of this, if a poison, in powder, (strychnine or arsenic for instance,) be conveyed by a tube through a narrow wound, in an oblique direction under the integuments, to some distance from the opening by which it is introduced, and there deposited—and under these circumstances the glass be applied over this spot, where the skin is sound and unbroken, the wound being without the bounds of the glass, none of the poisonous substance will be removed, and yet no indication of its action will be presented during the time of the application of the glass.

Third. The constitutional symptoms, such as tetanic convulsions, etc. are arrested by the establishment of a vacuum on the poisoned surface; then by removing the poison by an incision through the integruments, the life of the animal is preserved.

Fourth. When the cupping-glass is applied over the opening made in the integuments for the purpose of introducing the tube containing the poison, and this is deposited under the skin beyond the circumference of the glass, none of the effects are manifested during the continuance of the vacuum, but as soon as the cup is removed, the action of the deleterious article commences.

Fifth. If during the application of the cupping glass, placed as just stated, an incision be made between its edge and the place at which the poison has been lodged, death will ensue as speedily as though the atmospheric pressure had not been removed.

Sixth. If after the application of a glass for a given time, to the sound skin over the spot where the poison has been deposited, the glass be removed, death will then ensue as soon as if no such application had been made.

This last position is entirely at variance with the observations of Dr. Barry. He expressly says, that "after the glass had been taken off, the animal continued for one or two hours to carry imbedded in his cellular tissue a dose which would infallibly have destroyed him in a few minutes, had the cupping-glasses not been previously applied.

I have repeatedly observed, however, that if the animal was abandoned to his fate after the glass had been removed, after an application of it for an hour or more, that death took place as soon afterwards as it ordinarily did when no vacuum had been formed."—pp. 6—7.

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Not satisfied with Dr. Barry's explanation of the *modus operandi* of cupping-glasses in the production of these effects, Dr. Pennock sought for some other. The following are his words:

"Agreeably to Dr. Barry's view, external absorption is not a vital function, but it, as well as the circulation in the absorbing vessels, is a physical effect caused by atmospheric pressure, the fluids passing through the absorbents precisely as a liquid is forced into, and rises into a Torricellian vacuum.

Dr. Barry, in support of his opinions, appeals to the series of experiments: the truth of the results of which, as stated by him, I have had the pleasure to confirm. His view, however, of the modus operandi of the cupping-glasses in preventing the effects of external poisons are, I am induced to believe, entirely erroneous.

The results of some experiments which I instituted with a view of testing the principle, whether their efficacy *depends merely on the abstraction of atmospheric pressure*,, have convinced me that such is not the fact.

It is true that the exhaustion of air from within the bounds of the glass, relieves that portion of the body inclosed within its periphery from the usual atmospheric pressure: but the parts *beneath* the *circumferenee* of the cup, suffer an increase of pressure proportionate to the diameter of the glass. Thus the glass which I used, being one inch and a quarter in diameter, the animal suffered an increase of pressure on the part just indicated of at least fifteen pounds." p. 16.

To this *pressure* Dr. P. was led to ascribe the efficacy of cupping-glasses, and proceeded to verify his theory by experiment. He has given us the details of three, which he regards as conclusively in the affirmative. It is not, then, the *diminution* of pressure within the circumference of the glass, when exhausted of air, but the necessary *increase* of pressure under that circumference, from the weight of the air upon the glass, which prevents the constitutional effects of the poison. This pressure, he remarks, may arrest the functions of both the vascular and nervous systems of the part, and thereby prevent a constitutional disturbance, whether it results from absorption or sympathy. Admitting the fact, which we see nothing to justify us in denying, it follows, that pressure to or about the poisoned wound, by any other instrument or means than the cupping-glass, provided it be equal in degree, will be equal in effect; a practical fact of importance, seeing that

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in the country, cupping glasses and even the skill necessary to use them with efficacy, are often wanting. Pressure over the part to the amount of 15 or 20 pounds to the square inch being the *desideratum*, it may be made in any manner that is at the time most convenient. It should be continued for hours or even days.

From the great efficacy of cupping, and of pressure by other means, in arresting tetanic symptoms from strichnine, Dr. P. is inclined to recommend the same application in traumatic tetanus, or in wounds which threaten to occasion that desperate malady. The suggestion seems plausible, and we hope that such of our readers as may have an opportunity, (the number we trust will be few) will think it worthy of being tested by experiment.

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MISCELLANEOUS INTELLIGENCE.

I. ANALECTIC.

1. *Permanent Evidence of Successful Vaccination.* Under this head, Dr. George Gregory has published a paper in the MAY No. of the Medical and Physical, in which he modestly disclaims all title to much novelty—and only hopes to be useful, by refreshing the memory on certain minute points connected with vaccination. We shall give a very brief abstract of these minute points.

First. A proper vaccine scar should be distinctly defined, even after a lapse of 20 years; in order to which, it is nearly indispensable that the scab should remain on—or, at least, that cicatrization should not be completed till the 21st day. In some cases, the cicatrix is formed by the 14th or 15th day—and then "vaccination is imperfect."

Second. The true and perfect vaccine scar is circular, or nearly so. When common inflammation supervenes early, the scar is irregular in form, and the system is still open to the small-pox, more or less modified. The diameter of the circular scar is not material. The largest, however, which he considers compatible with safety, will be that of a six-pence, or small wafer.

Third. The vaccine scar should be indented and radiated; though he does not insist on these appearances as a *sine qua non* in the proofs of perfect vaccination.

The sources of imperfection in the process of vaccination are chiefly the following:—effete virus; hence the inoculation should always be with fresh matter, and not by points, if possible:—pre-occupation of the system by some other important process, as dentition, visceral inflammation, fever, hooping-cough, porrigo favosa, or herpes:—and, lastly, a too advanced period of life at the time the process of vaccination is instituted.

For several collateral remarks and observations, all of a practical nature, and all indicative of the sound judgment and accurate discrimination by which the author is characterised, we must refer to the original paper in our cotemporary for May last.

In the same journal there are two papers connected with the subject of vaccination—one by Mr. Dalton, an eminent surgeon of Bury St. Edmonds, who describes an epidemic variola, against which vaccination made a bold and successful stand—the other by Dr. Morton, Physician to the Metropolitan Infirmary for Children, in which

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it is shown that, in his own experience at least, the proportion of variolous attacks after vaccination does not exceed four per cent. at the most. In the case of failure, the disease was generally very mild." *Med. Chirur. Rev. Oct.* 1827, *p.* 459.

2. *Ununited Fracture Cured by Pressure.* In a note to the article on "carotid aneurism" in our last number we alluded to this case but gave no particulars of the treatment. These have since been detailed by Mr. Brodie in our esteemed contemporary for July, and it may not be uninteresting, just to glance at the means by which the cure was affected.

J. M'Ewen, æt. 24, broke his right arm and left leg, in November, 1825. He was taken to a hospital and treated in the usual way.—The fracture of the leg did well, but no union took place in the arm. In August, 1826, he went to Panton Square, when Mr. Wardrop passed a seton, which was withdrawn at the end of a week. After a time the patient was discharged, and reported as *cured* in the Lancet. In Nov. 1826, he entered St. George's, the broken ends of the bone appearing to be united by ligament, riding one over the other, and admitting of extensive motion. Mr. Brodie now determined on applying pressure, on the principle suggested by Mr. Amesbury. The fore-arm being semi-bent, a wooden splint adapted to its figure, and reaching from the axilla to the fingers, was applied on the inside. On the outside of the arm, a straight splint was placed, extending from the shoulder to the outer condyle, and both splints were then secured by bandages. Over all there was a tourniquet, the band of which embraced the fracture, whilst the degree of pressure thus made on the broken bone was easily regulated by the screw, which was on the outside of the arm. The splint on the inside being broader than the limb, and only slightly concave, the principal vessels were defended from pressure, and whatever was the force employed, the circulation was but little interrupted. In six weeks, the motion of the fractured bones was much diminished, and at the end of three months none was perceptible. On the 31st May, the man left the hospital, the bones being firmly consolidated and the arm as useful as before the accident.

This case does credit to the ingenuity and perseverance of Mr. Brodie, and we have no doubt that pressure, properly and steadily applied, will prove effectual in many, if not most, of those cases of ununited fracture, which have been not unfrequently an approbrium to surgeons and surgery." *Ibid*, *p.* 478.

II. ANALYTICAL.

3. *Poisoning with Sulphuric Acid.* In the eloquent life of Mr. Ledyard, the American traveller, just published from the

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pen of Mr. Sparks, it is stated that the Traveller, when preparing to depart from Cairo for the interior of Africa, "was seized with a bilious complaint, which he thought to remove by the common remedy, *Vitriolic Acid.* Whether this was administered by himself, or by some other person, is not related; but the quantity taken was so great, as to produce violent and burning pains that threatened to be fatal, unless immediate relief could be procured. This was attempted by a powerful dose of *tartar emetic.* But all was in vain. The best medical skill in Cairo was called to his aid without effect." That he should have died under such a method of treatment, is not surprising. It is not our purpose, however, to rail against our Egyptian brethren, but to connect with the name and fate of our distinguished countryman, a catalogue of the proper antidotes for the poison which occasioned his death; that we may contribute our mite towards their general dissemination.

When the liquor called Sulphuric Acid, Vitriolic Acid and Oil of Vitriol, or the medicine formed from it and denominated Elixir Vitriol, is taken to excess, tartar emetic should not be administered, for it would be decomposed; and, if it were not, the apprehended mischief would be perpetrated before it could operate. An alkaline agent is that on which we should rely; and when one is not at hand, another should be taken. Calcined Magnesia, according to Orfila, is the best, and may be taken by the table spoonful. The lump or carbonated Magnesia will answer very well. The supercarbonate and the carbonate of Soda; the supercarbonate of Potash, or sal æratus, the carbonate of potash or salt of Tartar, and a ley made of common wood ashes, are equally good. In the absence of all these, powdered Chalk, Lime-water, or Quick lime, if within reach, may be administered. Finally, should none of these be attainable, at the moment, the contents of the hartshorne or the smelling bottle (carbonate of Ammonia) may be emptied into the patient's stomach. If the acid were taken in a concentrated state, it would be useful to drink water freely; but, that its union with the poison, would develope a degree of heat, that might more than counterbalance the good effects of the dilution. Meanwhile, if vomiting can be

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excited by irritating the throat, it should be done; or the stomach may, perhaps, be emptied by strong pressure with the fists applied over that organ, the patient being placed with his face downwards, and his head and shoulders considerably lower than the trunk of his body; or the stomach pump may be used.

The same antidotes will be proper when the Nitric, Muriatic, or any other strong acid, has been taken.

The experienced physician will, we trust, excuse this enumeration, seeing that it may, possibly, be useful to the younger members of the profession; and finding its way to the people at large, may enable them, occasionally, to save an unfortunate person, who might perish before medical advice could be obtained.

III. ORIGINAL.

5. *Winter Quarterly Report on the Diseases of Cincinnati, concluded.* In our last number we spoke of Bronchitis, as constituting the predominant disease of the past winter. We must now say, that it was not the only form of thoracic inflammation which occurred among us. Cases of Croup, Pleurisy and Pneumonia were, occasionally, met with, both distinct from Bronchitis and associated with that malady; but they were, comparatively, rare. Indeed, according to our own observations, the pulmonary diseases of Cincinnati have, in these last years, undergone a change, in their relative frequency; so that Croup and Pleurisy are less frequent, while Bronchitis is more common, than in former years. We do not pretend to have discovered the cause of this variation; but, at present, feel assured of its reality. Perhaps the denser population of the city; the establishment of a great variety of manufactures; the erection of more than twenty stationary steam engines; and the establishment of half that number of foundries, in all of which the combustion of a stone-coal, abounding in bitumen and sulphur, takes place to a great extent; finally, the multiplication of stone-cutters yards, where large quantities

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of friable sand-stone are sawed, cut and polished, in which operations clouds of arenaceous dust are sent abroad, may have given to the city a factitious atmosphere, which has deranged, to a certain degree, the vital properties of the Bronchial membrane, and predisposed it to the action of vicissitudes of temperature. If this can explain the greater frequency of Bronchitis, it will, at the same time, account for the comparative rarity of other forms of pulmonary disease; for the influence of atmospheric changes being invited upon the mucous membrane of the lungs, their other tissues would, of course, in a great degree, escape.

Treatment of Bronchitis and other Pectoral Inflammations. It is not our design to enter fully into this subject. We shall limit ourselves to a few remarks on the more important remedies, and first of BLOODLETTING. It would be superfluous to urge upon the profession the necessity of early, copious, and, in many cases, repeated bloodletting, in acute inflammations of the serous membranes of the chest and lungs; or to insist on the value of cupping, in those of a chronic character; for every physician is aware of the importance of these remedies, in such cases. But in Bronchitis both acute and chronic, venesection is often omitted to the great, if not fatal, injury of the patient. It is not difficult to perceive the causes of this omission. In the first place, many cases of bronchial inflammation are unattended with pain or a tense pulse; two circumstances which tend, as powerfully as negatives can tend, to divert the mind from venesection. Secondly, when the disease is accompanied with pleuritic pain, it is, also, attended with expectoration, which is apt to suggest to the physician, that it is a case of pleurisy or pneumonia, in the expectorating stages, when bloodletting is, in general, contra-indicated. Thirdly, bronchitis very frequently attacks infants and aged persons who are *cæteris paribus*, much less frequently and copiously bled, than those in middle life. From the influence of these causes many patients have been lost, who might, by the judicious employment of the remedy under consideration, have been saved. As every thing, however, has its limits, so it is possible, in bronchial inflammation, to carry venesection

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too far. Of this abuse we have met with several instructive examples. When the disease has existed for several weeks, and is attended with copious expectoration, the powers of the system are apt to fail, from the further loss of blood, and the patient to sink under the copious secretion, almost passive, which is going on from an extensive surface. *Tartarized Antimony.* We have found this medicine of great value in Bronchitis. It may be adapted to every stage. In the early and acute periods of the disease, it may be administered in liberal quantities, alone, or combined with nitrate of potash, so as to nauseate, heavily, and excite full vomiting; which never fails to give signal relief, provided bloodletting has been premised. In more advanced stages it may be conjoined with Opium in pills, or laudanum may be added to a solution of the tartrate. *Calomel and Squills.* We have employed this combination with much advantage in Bronchitis. When the disease is not extremely acute, the cure, after a single bloodletting, may be commenced, with this compound; and in mild and chronic forms we have often, with success, made it the first remedy. It should be administered, for two or three days, in such quantities, as to nauseate the patient; and, by the end of that time, to have produced some effect on the mouth. It may, then, be followed by gentler measures. *Digitalis.* This is an important remedy, in the more chronic cases. When the inflammatory action is considerable, we give in connexion with tartarized antimony, in a dilute solution. The following formula, on the whole, is the best we have employed:

℞ Tartarized antimony, gr. ij.
Saturated tincture of digitalis, ʒij.
Spirit of nitros ether, ʒvj.
Mucilage of gum arabic, with distilled water, ʒvij. Mix.

A table spoonful (ʒss) to be given every 2, 4, 6 or 8 hours, according to circumstances; and repeated 'till the pulse experiences the characteristic power of the digitalis. In advanced stages of the disease, the tincture of opium should be added to the solution, in such quantities as to keep the patient slightly under its action. We have met with cases which required the long continued administration of digitalis. In

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many of these, we have united the tincture, with the compound tincture of Benzion, so long celebrated among the people, by the name of Balsam of Life, and used and abused in pectoral maladies. The combination of which we speak, diminishes expectoration, allays morbid irritability, and strengthens the lungs, in a more decided manner than any other medicine with which we are acquainted. Of the *Colchicum* we have already expressed our opinion at p. 94 of this number. The *Bark.* There are stages of bronchial inflammation which call for this medicine. In phlegmatic temperaments, when the disease has existed for some time, the expectoration is profuse, and the pulse feeble and frequent, the Bark may be administered with great effect. Opium, under these circumstances, is an excellent adjuvant. The pulse speedily becomes slower and fuller; the expectoration diminishes; and the cough, which is kept up by the irritation of secreted mucus, consequently abates; while all the symptoms are aggravated, even to a fatal degree, under a debilitating plan. *External applications.* We have not found blisters or tartarized plasters, so beneficial in bronchitis, as many of our brethren suppose them; if we may judge from the frequency with which a resort is had to them. When pleuritic pain exists, they are useful; but in the absence of this, we have not often seen them effect much. It is necessary, however, to attend to the state of the skin, which is often unhealthy. In feeble constitutions, when the disease is of a subacute character, the cutaneous circulation is defective, especially in the lower extremities, and the feet are apt to be cold. The perspiration is of course suspended, and the lungs are in a state of congestion. This condition, occasionally, requires bloodletting; and when that remedy is beneficial, it is always followed by increased energy of the pulse. The greater number of cases, however, do not require, or even admit of, venesection. In all of them a hot salt, foot-bath, of the strength of a pint of common salt to the gallon of water, used twice or thrice in the course of twenty-four hours, with sinapisms to the soles of the feet, and, in some cases, blisters to the ankles, is attended with the happiest effects. After two or three days, the heat be-

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comes equally distributed, the perspiratory function is restored in an equal degree, the determination upon the mucous membrane is diminished, and the dyspnœa of the patient sensibly mitigated. With these remarks we dismiss the subject.

TO SUBSCRIBERS, CORRESPONDENTS AND EDITORS.

1. It will be recollected that our numbers are to consist of 56 and 48 pages alternately. On this plan the present number would comprehend 48 only. As a considerable part of the Discourse on Intemperance may not, however, be regarded as sufficiently professional, we have extended the number eight pages beyond its proper limits, which, we hope, will satisfy all who are interested.

2. The third number, which will be put to press immediately, will contain Original Essays and Cases, by Dr. Coons, of Alabama, Dr. Brower, of Ohio, and the Editor.

3. The following Journals have been received, in exchange:—

The American Medical Recorder, for April, 1828.

The American Journal of the Medical Sciences, for May.

The North American Medical and Surgical Journal, for April.

The New-York Medical and Physical Journal, for January, February and March.

The American Journal of Science and the Arts, for the same period.

The Transylvania Journal of Medicine and the Associate Sciences, Nos. 1 and 2.

The Boston Medical and Surgical Journal, (weekly) from No. 2 to 14—(1st No. miscarried.)

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THE

WESTERN JOURNAL

OF THE

MEDICAL & PHYSICAL SCIENCES.

JUNE, 1828.

ESSAYS AND CASES.

ART. I.—*Cases illustrative of the Effects of* IODINE. By JEREMIAH H. BROWER, *of Elizabethtown, Ohio.*

Case 1. N. M., aged 19, of light complexion and strongly marked scrofulous habit, about six months since, perceived a small tumour, on the side of the neck under the lobe of the left ear, which gradually increased in size, though unattended with pain. When she applied to me for assistance, a cluster of enlarged glands, about the size of an egg, extended from the angle of the lower jaw to the sternal end of the clavicle, hard and unyielding in consistence, and very irregular and lobulated in structure. Her general health had been much impaired for some time previous, being constantly harrassed with a dry, hard cough, without any expectoration. She complained of a sense of straitness and difficulty of breathing, and was much emaciated: her extremities were somewhat œdematous: digestion perfect, and catamenia regular. From these circumstances, connected with the fact of two members of her family having recently died of confirmed phthisis, I was induced to believe, that a tubercular affection of the lungs was in progress. The ordinary routine of treatment for similar local affections, was diligently pursued for some time, with no apparent effect. I then resolved to prove

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the effect of the Iodine, and accordingly prescribed the tincture, made according to the following formula:—R. Hydriodat. Potas: 3ij. solv. in sp: Rectif. 3v; 15 drops to be taken in a little mint water, 3 times a day: she was also ordered to rub the tumours well once, twice or thrice a day, with the following liniment: R. Tinct. Iodin. 3ij, Lin. Sæpon. 3ij. mix. On the sixth day of this treatment, a perceptible diminution of the tumour had taken place; and the skin over it, which had been tense and adherent to the parts, could be readily corrugated: her cough had greatly diminished, and her breathing was less difficult and laborious. As her pulse was now full and bounding, and she complained of severe headache, she was bled to 18 oz. and directed to omit the tincture for two days. She then resumed it, and gradually increased the dose to 25 drops, thrice a day: the tumours meanwhile rapidly decreasing, and with them the cough and pulmonic irritation. At the expiration of six weeks, the swelling had disappeared, and her general health was almost re-established; her strength and flesh were rapidly recruiting; and every symptom of incipient phthisis had vanished. This case occurred in the month of February. I saw the patient a few days since, she continues free from complaint, and has become comparatively fleshy.

Case 2. John C., a stout healthy lad of 18, was, in the summer of last year, thrown in wrestling, the knee of his antagonist striking and violently bruizing the scrotum and testes: he immediately fainted from the exquiste pain, and, about six weeks afterwards, perceived the right testis considerably enlarged, and, occasionally, after hard work, to be extremely painful. It continued to increase rapidly, until, being no longer able to conceal it from his parents, a respectable surgeon was consulted, who pronounced it a scirrhus of the testis, and proposed immediate extirpation as the only safe treatment. The patient, not relishing this advice, applied to me for assistance. The right testis was now enlarged to the size of a goose egg; hard and uneven on its surface, and very little painful on pressure. The skin was natural and healthy in its appearance, and adherent to the testis in

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several places. The epidydymis was enlarged, and its convolutions painful: the cord, also, was diseased as high up as it could be felt. This circumstance seemed to contra-indicate an operation. Upon its anterior surface were two or three superficial abscesses, which, when opened, discharged a small quantity of thin pus. For several weeks previous, he had, frequently, acute pains darting up the back and loins; and, besides the inconvenience felt from his back, his general health had become considerably impaired. Under the impression that the evident derangement of the digestive function might have some influence on the local disease, he was ordered to take Blue Pill and infus. Quassiæ; and to rub the tumour twice a day with camphorated mercurial ointment. By this treatment the general health was restored, the mouth having been slightly affected; but, at the expiration of a month, no diminution of the bulk or pain of the testis was perceptible. A variety of discutient applications were then used; and, for two weeks, the electrical shock was passed through it. I then, as a last resort, directed him to take 20 drops of the Tinct. Iodine twice a day, and to rub the part well with the liniment: the scrotum was suspended by proper bandages, and absolute rest enjoined. On the fourth day after commencing this treatment, the soreness of the tumour and darting pains left him, and he complained of a prickling sensation in it. He was obliged to omit the tincture for two or three days, as it produced distressing head ache and nausea, which were relieved by bleeding. By this treatment, at the expiration of four weeks, during which period he was obliged to lay aside his medicines several times, the testis was diminished to the size of a hen's egg; the skin of the scrotum became flaccid and corrugated as usual; and, at this time, the patient remains free from complaint, and no difference can be perceived in the size of the testes.

Case 3. J. Roberts, aged 56, was attacked in September last, with (as I suppose) general inflammatory rheumatism, which seated itself more particularly in the shoulders, back and loins. By active depletion, &c. his fever and pains left him; but, as he convalesced, he perceived a remarkable

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degree of weakness in the small of the back, with a dull heavy pain, and, occasionally, a difficulty in urinating; and sometimes there would be no alvine discharges for several days, and then he would have to resort to mechanical means to remove large quantities of hardened fæces. Supposing it to be the remains of his original disease, he paid but little attention to it, until he gradually lost all muscular power in his lower extremities, and became entirely unable to support himself or sit up. At this time (November) I saw him, and upon examination his general health was pretty good; appetite regular; a dull obtuse pain about the first lumbar vertebræ; his lower extremities perfectly paralysed, retaining their natural heat and sensibility, but the power of voluntary motion extinct, affording a fine specimen of Mr. Bell's distinction between the nerves of sensation and motion. To the ischuria, which at first troubled him, had succeeded a perpetual dribbling of urine,—manifesting a total suspension of the power of the sphincter vesicæ; and so entire was the loss of muscular energy in the rectum, that not a particle of fæces could be expelled without manual assistance. Upon a close examination of the vertebral column, no deviation from its regular and healthy aspect could be perceived, and percussion upon the spinous processes produced no pain or uneasiness; blisters, sinapisms, electricity and lotions, without number, had been applied; the Ung. Tart. Antim. had been used, liberally, without any effect. From the apparent integrity of the vertebral column, and the peculiar manner in which the disease was developed, I could not believe it to be a carious affection of the vertebræ or the intervertebral substance, so ably described and treated by Mr. Pott; and was convinced that the paralysis proceeded from a morbid thickening or enlargement of the theca vertebralis, lessening the calibre of the spinal canal, and thereby pressing upon the spinal cord, intercepting the nervous influence, and as forming a fair case for the trial of the Iodine. I accordingly ordered the tincture, 15 drops, three times a day, to be gradually increased, and a liniment composed of equal parts of Tinc. Iodin. Tinct. Lyttæ and Sp. Camph. to be rubbed in.

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from the neck to the sacrum. With a view to act upon the rectum and bladder, he took aloetic pills daily, and the Infus. Fol. Uv. Ursi, ad libitum. After pursuing this course for five or six days, excessive vomiting, head ache, and distressing sense of tightness across the breast, induced me to discontinue the medicines. He was bled from the arm to 18 oz. and 6 or 8 oz. more were abstracted by cupping on each side of the lumbar vertebræ; by which means he became relieved, and resumed the use of his medicines, which did not again produce any untoward symptoms, although he increased the dose of the Tinct. to 30 drops. In two weeks from this time, he could support himself upright in bed, and could void the fæces naturally, and retain his urine for two or three hours. From this period his recovery was unabated and rapid, and at the expiration of two months he was able to walk across the room without assistance, and the functions of the rectum and bladder were entirely restored.

The success of this interesting case afforded me the highest gratification, as illustrating, finely, the effects of this powerful agent, and justifying the diagnosis of the case.

Case 4. M. D., a sickly looking girl, aged 14, had, for two years, an indolent enlargement of the parotid gland, which gradually increased in size, until it had become as large as the segment of a hen's egg, producing great deformity and pain with difficulty in masticating. She was evidently scrofulous, and manifested strong indications of disease of the mesenteric glands. I directed 10 drops of the Tinc. Iodin. twice a day,—the iodine liniment to be rubbed in the tumour, and blue pill, with occasional laxative doses of rhubarb and magnesia. As the patient resided a considerable distance from me, I did not see her until three weeks had expired, when the enlarged gland had become reduced one half; her general appearance and health were greatly improved; appetite and digestion regular; her medicines had produced no unpleasant effect whatever; and she was ordered to increase the dose of iodine to 15 drops, and to continue her other medicines. In two weeks I saw her again: the tumour now had nearly disappeared, and every indication of return-

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ing health was manifested; she has become fleshy, and no vestige of the disease of the parotid remains.

I am now using the remedy in a case of incipient phthisis, in a decidedly scrofulous young woman, in which the past effects of the treatment give the most confident assurance of an entire cure being effected. In this case, also, the unpleasant influence of an over-dose of the article upon the sensorium and stomach, has obliged me to omit it for a few days, and employ venesection; which has uniformly relieved every unpleasant symptom.

It is not my purpose to enter into any disquisition as to the modus operandi of this important acquisition to the Materia Medica; but simply to communicate the results of my own experience with the article. Great discrepancy of opinion has existed with several eminent names, as to the utility and safety of the internal use of Iodine. Dr. Coindet, of Geneva, and Dr. Gairdner, discarding it as utterly unsafe and dangerous; while with others, of perhaps equal talent and discrimination, especially Dr. Manson, of Manchester, it has proved almost invariably safe and successful. "Quis sufficet tactas componere lites." Under these circumstances, it seems desirable to distinguish, accurately, the peculiar circumstances in which its use is indicated or may prove injurious; as it is only by patient and judicious investigation we can arrive at any fixed principles, on which to prescribe so powerful an agent upon the lymphatic system.

JEREMIAH H. BROWER.

Elizabethtown, Ohio, April, 1828.

ART. II.—*An account of a rupture of the Pylorus, with the appearances after death.* BY THE EDITOR.

In the 10th number of the Western Medical and Physical Journal, I published an account of the death of John McDonald, from a rupture in the Jejunum from external violence, the abdominal parieties remaining entire. I am now about to report a case of ruptured Pylorus, attended with analagous symptoms, and terminating in a similar manner.

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In the afternoon of the 14th of April, 1828, I was called to see E. P. aged 38 years, by occupation a cordwainer. He was said to labour under colic; and to have been attacked suddenly and violently. I found him sitting up, with a pale and cool skin, a feeble pulse, beating not more than 48 strokes in a minute, and complaining of excruciating spasmodic pain in the abdomen, the paroxysms of which were followed by incomplete fainting fits. Regarding it as an attack of flatulent colic, I, immediately, directed a hot, foot-bath; and began the preparation of a large dose of opium and calomel. Before it was ready for administration, he was seized with retchings, and drank a glass of tepid water. Slight vomiting occurred, with agonizing pain, which was followed by a degree of syncope that bordered on dissolution. As soon as he revived the portion of opium and calomel was administered, together with a quantity of paregoric. Stimulating, cathartic enemas were then employed; but they produced no fæcal evacuation, and, indeed, were themselves but partially discharged. About 10 o'clock I left him for the night, in the care of my young friend Dr. McDowell. The calomel and opium were repeated; laudanum was liberally administered; a dose of castor oil was given, and the injections were repeated, in the course of the night; but nothing more than palliation followed. The next morning, I found him thirsty, in pain and drowsy, with his abdomen distended, especially *in epigastrio*, and tender on pressure. His pulse was feeble, exceedingly variable in its rythm, at no time more than 60 in a minute, and frequently down to 46. It was obvious that peritonitis had supervened, and I bled him. The blood was sizy; but his pulse fell instead of rising in its energies; no alvine evacuation ensued; nor were the pain and swelling diminished. Calomel was now administered in large and repeated portions, with occasional doses of sulphate of magnesia and castor oil; the injections were repeated, and the abdomen was blistered. In the evening the symptoms were mitigated, and a small quantity of feculent matter was discharged. During the night a gentle salivation came on; he rested badly; had occasional retchings, in which he threw up

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but little; and the next morning was worse, than I had left him in the evening. The epigastric tension, and soreness on pressure, especially, had increased. The pulse remained nearly the same in frequency, but was still weaker and smaller. The case now gave me equal embarrassment and apprehension; for it exhibited unequivocal evidences of abdominal inflammation, combined with an exhaustion of the vital powers, which was as manifestly occasioned by something else, than the peritonitis, which had been developed. I could not doubt that a structural læsion existed; but of what kind it seemed impossible to determine. Examination was made for hernia—ventral, inguinal and femoral—but none existed; and I was led to conjecture that intussusceptio had taken place. I desired a consultation, and, in the afternoon, Dr. Pierson was called in. He was struck with the obvious signs of peritoneal inflammation; and the patient was again bled, more copiously than before. The pulse sunk during the operation, and the blood was not sizy. The striking resemblance of the case to that of McDonald, confirmed me in the opinion of its necessary mortality; but, as the patient retained his senses perfectly, and with his friends was desirous of being engaged in curative measures of some kind, they were continued. Among other means the croton oil and oil of teribinth were given liberally,—the latter was applied to the abdomen, and tobacco injections were administered: but every thing proved unavailing. The abdominal tumefaction and agony increased; his pulse became imperceptible, and towards morning he expired; about 60 hours from the commencement of the attack.

EXAMINATION OF THE ABDOMEN.

Leave being granted to inspect the abdomen, it was done the evening after his death. The distension was very considerable, and upon penetrating the cavity of the peritoneum, a great quantity of offensive gas escaped. On making an extended crucial incision, that membrane was found to be inflamed, and to have thrown out a quantity of coagulable lymph, with some admixture of pus. It was slightly agglu-

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tinated to the bowels; and these were extensively adherent to each other. The whole were immersed in a turbid liquor, of a yellowish colour, which emitted the smell of turpentine, and exhibited no inconsiderable quantity of oil floating on its surface. A large worm (lumbricoides) was crawling over the bowels. After sponging out between two and three quarts of fluid, (the quantity extravasated) we found the outer tunic of all the anterior and upper convolutions of the intestines, great and small, in a state of inflammation. The omentum was in the same condition. The spleen was large, tender, and so much inflamed, that its peritoneal covering peeled off. The liver was but little affected. The gall bladder was distended with healthy bile. The urinary bladder was empty and uninflamed. On examining the intestines, from the rectum to the stomach, no læsion was found, till we reached the pylorus; where the cause of all the mischief was discovered. *It was ruptured more than half way round, and the fissure exhibited the appearance of a clean cut.* Through this, the contents of the stomach and duodenum had escaped into the cavity of the peritoneum. On slitting open the bowels and stomach, the mucous membrane of the former was healthy, and the pyloric extremity of the stomach was equally healthy, on both sides. The mucous coat of its great extremity was considerably, but not deeply inflamed. No ulceration existed any where; nor had any part suffered gangrene. The closest inspection of the pylorus, did not enable us to detect any organic change, that could account for its laceration.

REMARKS.

I shall not indulge in many speculations on this case. Two or three sentences may contain all that I have to say. The deceased had labored at his vocation, with unabated diligence throughout the day, and was occupied, in a way that required him to press the end of a board against the pit of his stomach, or near that part. This was the only external violence that he suffered. At one o'clock he ate a hearty dinner; and between four and five o'clock was suddenly seized with the

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pain that has been described. Two hours afterwards, in attempting to vomit, he experienced the insupportable agony with syncope, which has been mentioned in the history of his case. Now the question arises, whether the rupture of the Pylorus preceded and occasioned the other symptoms, or occurred in the efforts to vomit?

Under either supposition, we may conjecture that his daily labours may have, to a certain extent, impaired the health and firmness of his epigastric viscera; and, consequently, predisposed them to suffer a læsion of structure. His stomach seems to have been torpid; for, when he vomited, he threw up undigested food which had been eaten two days before. Perhaps, therefore, it was greatly distended with flatus, while the Pylorus was contracted, as it is for the few first hours after dinner; in which condition the external pressure on the epigastrium might have produced the laceration. If it did not happen in this way, it would seem to have been caused by the vomiting.

ART. III.—*On the Spontaneous Combustion of the Human Body.* By M. MARC. *Translated from the Dictionaire des Sciences Medicales, for the Western Journal.* By THE EDITOR.

When we observe the considerable quantity of wood, or other inflammable materials, which is required for the combustion of a corpse, and how slowly that operation proceeds, it seems almost incredible, that it should be effected in a living body, in a few minutes, at the ordinary temperature, and without the known contact of fire. Nothing, however, is more certain than this event; which deserves to be contemplated with the greatest care by physicians, and, especially, by those who devote themselves to the study of legal medicine. In fact, this subject is involved in almost every inquiry into the causes of doubtful death; and it is important to know by what signs, it may be proved to have taken place; that we may not attribute to others, that which occurred independently of all human agency, and was entirely the effect of physical

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causes. The case narrated by the celebrated Lecat, in a posthumous memoir on spontaneous human combustion, (*Journal of Med. Chir. Phar. &c. for Jan. and Feb.* 1793) is well adapted to the support of this proposition. In 1725, a woman named Millet, an inhabitant of Reims, perished from spontaneous combustion. Her remains were found in the kitchen, about a foot and a half from the fire place; and consisted, only, of a part of the head, of the inferior extremities, and some of the dorsal vertebræ. As there was in the family a young and beautiful female servant, the husband was charged with having destroyed his wife, on her account. He was subjected to a rigorous criminal prosecution and found guilty; but, appealing to a higher and more enlightened tribunal, the case was pronounced to be one of spontaneous combustion; and thus was an innocent man preserved from infamy and the scaffold.

But we need not depend on the records of a period, characterised by the credulity which is inseparable from an imperfect knowledge of the physical sciences, for proofs of the reality of the phenomenon under consideration; as subsequent and better informed ages, have furnished examples so numerous and well authenticated, that we are no longer at liberty to cherish a doubt. *Some of these cases are given, in another volume of this Dictionary, under the head of* Cas Rares.

Dupont, Adolphi and Lecat seem to be the first who made publications on this subject; but it was reserved for M. Lair, at a later period, to illustrate it by a most comprehensive assemblage of facts, and ingenious reasonings. Nevertheless, the principal conclusions of this estimable author have been combatted by professor Kopp, of Hanau, in an excellent monograph which he has published on this subject. It is chiefly from the writings of these Savans, that I shall extract what I am about to say.

Messrs. Lair and Kopp have collected the best authenticated and most conclusive examples of human combustion, and to their works will I refer for these details. There is a case, however, which M. Lair has omitted, that deserves to be related here; seeing that the patient survived the catastrophy

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for some time, and was able to state the circumstances which preceded and followed it. This case, which M. Joseph Battaglia, a surgeon of Ponte-Bosio, published in one of the Journals of Florence, from whence Dr. Fouquet extracted it into the *Bibliotheque Salutaire* of Paris, 1787, is so much the more worthy of introduction here, as it throws a great deal of light upon the occasional cause of the phenomenon which we are considering.

"Don G. Maria Bertholi, a priest, of Mount Valere, in the district of Livizzano, made a visit, says M. Battaglia, to the fair of Filetto, where he had business. After having devoted a day's journey to the neighboring country, executing some commissions, he pushed forward in the evening for Fenile, and reached the house of his brother-in-law who resided there. On entering it, he requested to be shown into the apartment where he was to lodge. For some reason he placed a handkerchief between his shoulders and his shirt, and every body having withdrawn, he proceeded to say his breviary. But a few minutes had elapsed, when the family heard an extraordinary noise in the room, where they had left him alone. Perceiving the cries of the priest, they repaired instantly to the apartment; and, on entering it, found him extended on the paved floor, and enveloped in a thin flame, which receded as they approached him, and at length entirely vanished. They placed him, as soon as possible, upon his bed, and administered to him every kind of aid that was at hand. On the following day I was called in, and, having examined him with care, I found that the skin of the upper part of his right arm was almost entirely detached from the flesh, and hanging loose. In the space comprised between the shoulder and the thigh, the integuments were also as much injured as those of the arm. I proceeded to remove the fragments of skin, and perceiving an incipient gangrene, upon that part of the right hand which had suffered most, I immediately scarified it; but, in spite of this precaution, I found it the next day, as I had feared, in a state of complete mortification.

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"At my third visit, all the other injured parts were equally mortified. The patient complained of intense thirst, and was agitated with horrible convulsions. He discharged, by stool, a quantity of bilious and putrid matter, and was besides harassed with a continual vomiting; accompanied by a great deal of fever and delirium.

"At the end of the fourth day, after two hours of deep stupor, he expired. At my last visit, during which he fell into the lethargy of which I have spoken, I observed with astonishment, that the putrefaction had already made such progress, that the body of the patient exhaled an insupportable stench: worms had been generated in his skin, and were to be seen crawling even on the outside of the bed; and his finger nails of the left hand had pealed off. In this deplorable situation, I thought that nothing more could be attempted with advantage to the patient, and he was left to his fate.

"Having taken care to learn from the patient himself all that passed at the time of the attack, he informed me that when it occurred, he felt as if he had received a blow from a club on his right arm; and, at the same moment, he observed a blue flame issuing from his shirt, which, in an instant, was reduced to ashes, without the fire extending to the wristbands. The handkerchief which, on his arrival, he had applied over his shoulders, between his shirt and skin, remained entirely uninjured; as did, likewise, his drawers; but his cap was wholly consumed, without a single hair of his head being scorched.

"That the elementary fire dispersed in the air, had burnt his skin, reduced his shirt to ashes, and consumed his cap, without touching his hair, in the slightest degree, are facts, which I present to the public as well ascertained, and perfectly certain: besides, all the symptoms of the patient were those of a severe burn. The night was calm, and the air extremely pure. The persons who entered the room, at the time of the accident, did not perceive any bituminous or empyreumatic odour; nor did they observe any smoke. The lamp, previously full of oil, was dry, and the wick in a state of incineration.

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In attempting to account for human combustion, we should never lose sight of the fact that it takes place in the living body; and, consequently, that we must reject every explanation, that is exclusively conformable to the chemical and physical laws, which govern bodies deprived of life. It is on this principle, that the reasonings of M. Kopp, must prevail over those of M. Lair.

From observations continued down to the present day, it appears that nearly all the victims of human combustion have been addicted to the excessive use of spirituous liquors. M. Lair has concluded, therefore, that the different parts of their bodies, having suffered an alcoholic impregnation, had contracted a degree of combustibility, which rendered them liable to be burnt up. This opinion, adopted by many physicians, and especially by Beldoes, seemed, at first, to derive support from the dissection of persons, dead from drunkenness, from whose bodies there issued a spirituous odour. M. Lair has added, also, that the flame observed in these combustions, absolutely resembled that of burning alcohol; that the individuals to whom these accidents have happened, were generally very fat or very lean; and that in the former case, the fat supplied fuel for the flame, while, in the latter, a defect of moisture favoured the combustion.

But on the principles of sound physiology, can we admit the assimilation of any substance, whatever, unless it be subjected to certain changes? Vitality, as M. Kopp has remarked, destroys existing combinations, and forms others according to its own laws: this faculty may, it is true, be modified or limited by disease, but it never ceases entirely until after death. We should even regard, as a character of organic action, its power to form compounds more complicated, than those which result from the action of inorganic nature. This action frequently modifies the substances which are received from without, and developes others which the chemists regard as undecomposable. The cones of the pine, growing upon a sterile sand, which does not contain an atom of calcareous earth, have nevertheless yielded that substance to the chemist Einhoff. The observations of M. Lampadius

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have proved that vegetables contain earths which are not found in the soils where they grow, and the experiments of Braconnet, have left not the least doubt on this point.

Certain assimilated substances preserve, however, some one of their properties, such as their colour, odour, &c. We know, for example, that madder, taken internally, colours the bones red; that logwood communicates to the urine a similar hue; and rhubarb a yellow colour. The mushroom, (*agaric*) with which the inhabitants of Kamtschatca intoxicate themselves, imparts its inebriating quality to the urine. Frictions with garlic give to the breath the odour of that vegetable, &c. But are these substances really in the same state of combination, in which they were, before their ingestion and application; and, in the supposition that alcohol traverses the living body, as it spreads through a sponge, would not its great affinity for water, present an obstacle to its combustion? Besides, do not the inflammable eructations, which have been sometimes observed from brandy drinkers, prove that the liquor had already undergone a change in the stomach, since alcoholic vapours are not susceptible of taking fire, by simple contact with the atmosphere? The dissection of dead bodies is not more conclusive, since brandy, taken in large quantities, a short time before death, might readily transude through tissues, no longer endowed with the resistance of a vital principle. Our supposition is still further supported, by the observations of Metzger, who, in dissecting a great number of drunkards from brandy, of both sexes, never perceived any alcoholic odour, but found the stomach inflamed. Finally, the resemblance of the flame in human combustion, to that of alcohol, cannot be of any weight, since it equally resembles that emitted by several other bodies in a state of combustion, such as hydrogen gas, carbon and sulphur. We may add to these objections, that *every one*, who has perished by spontaneous combustion, has not been addicted to intemperance.

As to the state of corpulence or of leanness, it is certain that the fat in the cellular tissue, is never so destitute of

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aqueous particles, nor the emaciation so extreme, as to produce a degree of dryness that would favor rapid combustion.

In grouping the various cases of spontaneous human combustion, as M. Lair has done in the work already quoted, for the purpose of deducing from them some general conclusions, we find:

1. That women are a great deal more subject to this accident than men. Now we know that the skin and the cellular tissue of the female sex, are more tender and relaxed, than the male, and that women are more inclined to corpulence.

2. That spontaneous combustion has been confined to aged persons; almost all of them having passed the sixtieth year.

3. That besides the debility of the vital powers incident to this age, the individuals have generally been further reduced by some enervating affection.

4. That they had augmented their delicacy of constitution by an inactive life.

5. That the majority of them have been fleshy, (polysarcous) which, at an advanced age, generally implies atony, especially of the lymphatic system. Dropsy and cachexy are also common among this class of subjects.

6. That the greater part of those who have suffered spontaneous combustion, have been given to the excessive use of ardent spirits.

7. That some burning body, such as a lamp or coal of fire, has, almost always, been found near the place where the accident happened.

8. That the combustion has been so rapid as to extend to the whole body, before assistance could be rendered.

9. That the flame has exhibited great mobility; been difficult to extinguish with water; and has not attacked the surrounding bodies, even when in contact with them for some time.

10. That the spot where the combustion happened, has exhaled a strong empyreumatic odour; that the walls, the the ashes, and the coals, have been covered with a fœtid and greasy moisture.

11. That the trunk of the body has been, almost always,

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nearly consumed; and that, in the greater number of cases, the fragments remaining have been those of the head and extremities.

12. Finally, that in a great majority of instances, the event has happened in winter, when the atmosphere was cold.

Now, to arrive at an explanation of the phenomenon which occupies us, it is necessary to refer to the combustibility of the body, and to the cause which excites the combustion. The combustibility should, we conceive, be strictly and rigorously considered, since, in the state of health, the human body, is of the class of substances, that are burnt with difficulty.

This combustibility is caused by the weakness of the vital powers, from age, diseases, and a life of inactivity and excesses; the abuse of strong liquors, especially of brandy, debilitates the absorbent system, in a particular manner; and this condition may give origin, in certain cases, to an inflammable substance, which may accumulate in greater or less quantities, in the different parts of the body, according to their varieties of structure.

The combustible substance ought, then, to have the property of easily penetrating the cells of the body, without losing its combustibility by the contact of fluids.

There is not any known body, which more fully unites these conditions, than the inflammable gases; and without their agency, we cannot explain the occurrence to which our attention is directed. For it to take place, such a gas must accumulate in the cells of the body, as lymph accumulates in dropsy; and without insisting on the pre-existence of all the gas necessary to finish the combustion, we may suppose, with great probability, that this operation gives rise to a new gaseous developement, in the parts affected; and that a sufficient quantity is thus generated to finish the combustion. This theory obviates the objection founded upon the absence of a general emphysema in some of the victims of this kind of combustion, a state which appears, occasionally, to have existed.

Hydrogen is a principal element of animal bodies: it manifests itself during life, as well as after death; and forms a great

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variety of combinations with caloric, carbon, sulphur and phosphorus. Without insisting very much upon this generally admitted truth, it may be useful, at this moment, to recollect the different phenomena, which have a direct and forcible bearing on our subject.

Morton saw a flame project from under the skin of a hog at the moment an incision was made. Bonamet Ruysch, having applied a candle to the vapours which escaped, in an explosive manner, from the stomach of a woman whom he was dissecting, observed them to inflame. Ruysch remarked a similar fact, in examining the stomach of a female, who, for four days before her death, had not taken any nourishment. In other cases the gas has become inflamed without the contact of a burning body, and merely from mixing with the atmosphere. Such, among other examples, is that published in the Memoirs of the Royal Academy of Sciences, of Paris, for 1751. It happened in the same year, in the vicinity of Neufchatel. At the moment when a butcher opened an ox, which had been sick for some time, and was very much swollen, a flame projected from the paunch, which rose to the height of more than five feet. It burnt, not only himself, but a little girl that stood by his side; continued for several minutes, and emitted a very disagreeable odour.

The production, in the system, during life, of hydrogen gas, is not to be doubted. It takes place daily, as we know, in the alimentary canal; and similar observations to those which have been cited, are not rare. Sturm, Nieremberg, Bartholin, Gaubius, and Gmelin, speak of inflammable eructations, which appear to have occurred, principally in the north; where, after the excessive use of brandy, the individuals have been suddenly exposed to a cold atmosphere. The National Gazette of Bohemia announced, a few years since, an accident of this kind, which happened to a shepherd of Lahowitz, who died, in presence of several witnesses, in consequence of an inflammable eructation—the flame resisting every means which could be employed for its extinction. In these different cases, the decomposition of the alcohol and of the animal substances contained in the stomach, gave rise to the phos-

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phuretted hydrogen which inflamed, spontaneously, on coming in contact with the atmosphere. This inflammation was not more extensive, because the other parts of the body were not in a state to favor a general combustion.

Since we cannot deny the developement of inflammable gases, in the living body, we may consistently admit their accumulation in the cellular tissue, to a greater or less extent, according as it is more or less loose in its texture; and of course the parts which are the softest, as the trunk of the body, will be most subject to this accumulation.

But the human body, even rendered thus eminently combustible, cannot be inflamed without the agency of a spark; for, in admitting, that a part of the inflammable principle consists of phosphuretted hydrogen gas, we cannot sufficiently explain what takes place; and, in all cases, the sudden inflammation seems to have been general.

We regard the vicinity of a burning body, as the exciting cause of the combustion; and M. Lair has even concluded, that we cannot, strictly speaking, recognise *spontaneous* human combustions, since they are but accidental; but we do not perceive, according to this supposition, how the combustion could be so rapid, so general, and so complete; and we conceive still less at what point it would first show itself. Besides, there are cases of human combustion, where there can be no question of the presence of an ignited body.

In comparing these different considerations with the accident which happened to the priest Bertholi, we are disposed to regard electricity, as performing an important part in human combustions; and must even consider it as the occasional cause of those accidents.

Nobody doubts the idio-electricity of a great number of animals; and this state is also met with in a high degree, in many individuals of the human species. The celebrated traveller Brydone made experiments upon a female, whose idio-electricity was such, that sparks projected from her hair every time she combed it. He was able even to charge a Leyden vial, and to inflame brandy with these sparks. His experiments were made during a period of se-

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vere frost. A Senator of the United States, Mr. Jonathan Dayton, when at Washington, remarked, in pulling off and separating at night his woollen and silk stockings, that they emitted electric sparks. But nothing would be easier, than to collect an infinite number of such facts, disseminated through authors, both ancient and modern.

Inflammable substances accumulated in the bodies of the victims of spontaneous combustion, ought, even by their nature, augment the electric state. Overheating the body may contribute, equally, to an explosion of the electric matter; and it is thus that the proximity of fire or of a burning candle, may, in certain cases, aid in human combustion: at other times, this effect may be produced by violent exercise, or by any other cause which can excite electricity.

The electric spark, thus developed, penetrates with extreme celerity a body impregnated with any kind of inflammable matter; which, being every where inflamed, cannot be subdued by the aqueous particles of the system, so that the combustion, in a great number of cases, takes place with such rapidity, that the unfortunate victims have not time to call for assistance. The fire, as observation proves, at first spreads upon the surface, because it is in contact with the atmosphere, and thence extends to the deeper seated parts.

This theory will explain, without much difficulty, the following circumstances:

Women are more subject than men to spontaneous combustion, because their tissues are less compact, and, consequently, more disposed to gaseous accumulations.

Spontaneous combustions occur most frequently among the aged, because they are more addicted than the young, to the use of spirituous liquors; they take but little exercise, and their vital energy, especially in the lymphatic system, is enfeebled.

The character of the flame—its lightness, its mobility, and its resistance to the action of water—are all proper to hydrogen gas. In some phenomena of nature, such as the ignis fatuus, and certain meteors, in which this gas is supposed to perform an important part, it manifests the same properties.

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The furniture and other surrounding objects are but little injured, because hydrogen gas, in combustion, does not inflame the greater number of bodies, unless it be in very close contact with them.

The water which bedews the walls of the apartment in which the combustion took place as well as the coals and ashes of the deceased, is furnished by the combustion of hydrogen gas; and, also, by the evaporation of the liquids of the burnt body. The unctuous aspect of this water, is owing to the presence of a portion of fat, which has been volatilized by the heat.

The fœtid smell is that of the empyreumatic oil, formed during the combustion.

The trunk of the body is always more injured than the other parts, because of the great size of its cavities; and of the looseness of their cellular texture. Finally—

The winter is the season when spontaneous human combustions most frequently occur; because the cold air is a bad conductor of electricity, and promotes the idio-electricity of the animal body.

EDITORIAL NOTE.

We have translated (hastily and inelegantly) the ingenious memoir of M. Marc, as a kind of suplement to the Discourse on Intemperance, published in the preceding numbers of this Journal. Although a translation and reprint, it will, we presume, offer considerable novelty to most of our readers, as the subject is one which has attracted but little attention from British and American writers. Indeed, of nine works referred to by M. Marc at the end of his article, every one is Continental. Whether this should be regarded as evidence that this event is more frequent among the people of the Continent, than those of Great Britain and the United States, or only that it has received more attention we are unable to say.

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ART. IV.—*Notices of the principal Mineral Springs of Kentucky and Ohio.* By THE EDITOR.

The Mineral Springs of Kentucky and Ohio, especially of the former, are numerous and considerably diversified in their composition and qualities. They are but little known to the profession, even of those sites; who, in general, are, therefore, unable to direct their patients to a proper choice. Having visited most of them, though not with the means of an accurate analysis, nor for sufficient length of time to observe all their effects) I propose, in this paper, to give a brief notice of those which constitute our principal *Watering Places.*

The countries on each side of the Ohio river, present an identity in the age of their rocks, but considerable variety in their composition. They are all secondary, and disposed in horizontal strata. The predominant rocks are grey lime-stone, abounding in organic remains; and sand-stone, alternated with shivers and slate-clay. The calcareous formation presents considerable variety in its geological character, as well as in its chemical composition. Springs are subterranean streams, supplied chiefly by the rains which percolate through the rocks over which they fall; and which, in their meanderings, dissolve such soluble matters as may be in their way; and hence the diversity, in quality, of the mineral waters, in the region of which I have spoken. Throughout almost every part of it, the common spring and well water, is *hard*,—in other words, is impregnated with the carbonate and sulphate of lime, the muriæ of soda, and other saline substances. When any one or more of these, or other ingredients, are present, to a certain degree, the water is no longer regarded as fit for culinary purposes; but pronounced medicinal, and resorted to by the valetudinary. In their selection, they are too often governed by considerations of convenience, or act in almost total ignorance of the relative effects of different springs. Thus they often suffer injury, when they expect to receive benefit. A mistaken choice in the watering place, is not, however, the only cause of disappointment. The conduct of the patient while there, and the exposures

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to which he is subjected, contribute greatly to an unfavorable result. Hence it is by no means uncommon, to see invalids who left home in hope, return in discouragement, if not despair. For the infirm to derive advantage from the use of mineral waters, several circumstances must be attended to.

1. It is necessary that the spring should be well chosen, in other words, adapted to the case of the patient.

2. That it should be in a healthy situation; or one, at least, as exempt as possible from the causes which induced the disease which is to be cured.

3. That the malady should be curable; or, if not curable, susceptible of palliation.

4. That it should not be of such a kind as to be aggravated by exercise.

5. That the patient should be comfortably lodged, in a dry and airy apartment, instead of being confined in a small cabin or room, close upon the ground floor, surrounded by high weeds and grass, in a damp valley, as is too often the case.

6. That he should not participate in the dissipation, which is so commonly practised by those who visit watering places for amusement only.

7. That he should be exceedingly temperate and simple in his diet. Mineral waters of almost every kind sharpen the appetite, sometimes to a morbid degree, and the majority of patients, suppose, or pretend to suppose, that while at a mineral spring, they may indulge themselves with impunity. Thus, in numerous instances, the beneficial effects of the water, are more than countervailed, by errors and excesses in diet.

8. That he should visit the watering place between the 15th or 20th of May, and the same period in September. The proper time, in this country, is the four months preceding the autumnal equinox; though, on the whole, it is better and safer to limit the residence to the three summer months. The first half of May is almost always too cool and rainy to be comfortable; and most watering places too much infested with fevers after the first of September, to justify a longer sojourn at them. These are given, however, as general rules, to which there are exceptions.

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9. That the patient should remain longer than is usual. Of all men, the Anglo-American is, perhaps, the most impatient. He arrives at a watering place, and, like a thirsty animal, obedient only to his sensations, proceeds to drench himself. In three days he is, perhaps, worse than when he arrived; and, in a week, he decides, that the waters can do him no good, falls into displeasure with every thing about him, and repairs to another spring, or returns home in regret, at his useless expenditure of strength and money.

In most cases, mineral waters should be drunk moderately and perseveringly. Their specific effects, in many instances, are not perceived, nor, indeed, produced for some time. Their first impression, on many invalids, is unfavourable; but, by continuing them, the constitution, at length, becomes reconciled to their action, and is ultimately strengthened by it.

10. That in journeying to the watering place, he should proceed with deliberation, and not in a feeling of anxiety to reach the fountain upon which his imagination is turned, subject himself to long daily journeys and great fatigue. The end cannot justify such means. He should look to the travelling, not less than the water to which it is to conduct him, as a source of benefit; and, so perform it, as to increase instead of exhausting his strength.

11. That he should not place too exclusive a reliance on the water. It may be an important, without being the only, means of cure. In many cases, a particular course of diet is necessary, and should not be abandoned. In others, certain medicines are requisite, and should be persevered in.

By an attention to these, and such other rules as individual cases will suggest, mineral waters may do good in various cases; and, aided by the travelling, and the reviving and alterative influences of pleasant scenery and new social aspects, may, sometimes, effect that which all the drugs of the apothecary could not reach; and, what is still more, may avert the fate which, in chronic diseases, too often awaits him who is, from day to day, compelled to swallow them *en masse*. There are physicians who estimate the value of their interference, by the bulk and number of their boluses; and any

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spring, not absolutely impregnated with arsenic, would prove a fountain of health to all whom it might extricate from such keeping. These strictures, apparently severe, are directed against the practice in chronic diseases, only; but it is generally for them that mineral waters are prescribed.

Having premised these general remarks, on the use and abuse of mineral waters, I shall proceed to speak, in detail, of some of the principal watering places in the West.

Harrodsburg Springs.

The town of Harrodsburg, one of the oldest in Kentucky, is situated ten miles south of the river which bears that name, and near the geographical centre of the State. The site is elevated, rocky and rolling, but not hilly; and the surface of the surrounding country has the same character. Neither the town, nor its immediate vicinity, presents, in its scenery, any thing striking or picturesque; but within two or three hours ride, in different directions, the perambulating invalid may see several objects not unworthy of notice.

1. Union Village, inhabited by Shakers, who exhibit a characteristic specimen of the social, economical, and political relations of that singular people.

2. The spot denominated Knob-Lick, fifteen miles S. E. of Harrodsburg, five miles from the old and pleasant village of Danville, the site of Centre College; and two miles from the farm of the late venerable Gov. Shelby. The knobs or hillocks, are from one to two hundred feet high, more or less conical, some of them insulated, others connected by crumbling isthmuses,—the whole forming a group of barren, conoidal eminences, which are finely contrasted with the deep verdure of the surrounding plain. They consist of a marlaceous slate-clay, strongly inclined to disintegration, and reposing on shale.

3. The grey, mural cliffs of the Kentucky river, which flows in a narrow and winding ravine, nearly 400 feet in depth. This great natural canal, may be visited with facility, by several roads; and offers, in the grandeur of its high and precipitous banks, embellished with evergreens, a great deal, to interest all who have a taste for the sublime and beautiful.

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But we must return to that which is more important to the invalid—

The Springs. These are four or five in number. They burst out near the summits of the ridges, on which the village of Harrodsburg, is built. The mass of these ridges is composed of lime-stone, much of which is of a fine grain, and impregnated with magnesia. All the springs afford water, essentially of the same composition; though the proprietors are accustomed to speak of them, as presenting some variety in their qualities and effects. None of the veins are large. They have no gaseous impregnation, and, consequently, do not sparkle. Their temperature is that of other springs, not more copious, in the same latitude—about 58° of Fahrenheit.

The water from one of them, on the land of Mr. Sutton, has been examined, with some care, by Dr. Best and myself. The following is a statement of the experiments made, and the results obtained; which, although not so rigorous and comprehensive, as to constitute a perfect analysis, will convey a correct general idea of the composition of all the fountains.

EXPERIMENTS.

1. Prussiate of potash and infusion of galls produced a slight discolouration, both before and after boiling.

2. Nitric acid occasioned no change, nor effervesence.

3. Oxalic acid produced an obvious and diffused whiteness, which appeared slowly, and the same effect occurred after boiling.

4. Acetate of lead threw down a copious white precipitate, soluble in nitric acid.

5. Nitrate of silver produced the same kind of precipitate, soluble in the same acid, and, also, in ammonia.

6. The carbonate of ammonia caused a slight whiteness; and, upon the addition of the phosphate of soda, a copious white precipitate ensued.

7. One thousand grains of the water, evaporated, left a residuum of dry white matter, which, when apparently deprived of its water of crystallization, weighed twelve grains.

During the evaporation a slight pellicle formed on the surface.

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8. A portion of this residuum afforded an effervescence with several acids, and was wholly soluble, in dilute muriatic acid.

9. Of this effervescent portion, nearly the whole was found to be soluble in sulphuric acid. The remainder was probably lime; which, united with the sulphuric acid, would remain undissolved. From this solution, the addition of carbonate of ammonia and phosphate of soda, threw down a copious white precipitate.

10. One thousand grains of the water were evaporated to one half. Lime water was then added, which produced a turbidness. The liquor was filtrated. Oxalic acid was then added to it, and occasioned a precipitate. It was filtrated again, and concentrated still further. Acetate of Barytes was then added, (not in excess) and produced a copious white precipitate. The solution was finally evaporated to dryness, and heat enough applied to decompose and drive off the acetic acid. The residuum, dissolved in water, changed the vegetable blues to green.

CONCLUSIONS.

This water, it would seem, from the foregoing experiments, contains the following salts:

1. Sulphate magnesia, in large quantities. This is the characteristic ingredient.
2. Carbonate of magnesia, in a small quantity.
3. Sulphate of soda, do.
4. Sulphate of Lime, do.
5. Carbonate of Lime, in minute do.
6. Iron (probably in the state of a sulphate) a trace.
7. A minute quantity of sulphuretted hydrogen, as I ascertained by experiments, made at the spring itself.

From this analysis, it appears that the waters of the Harrodsburg Springs, bear some resemblance, in the materials which they hold in solution, to the celebrated Seidlitz fountain of Bohemia. Their predominant ingredient, is sulphate of magnesia, or Epsom salt; though the other matters which

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they contain, especially the sulphate of iron, small as it is in quantity, may contribute to their beneficial effects.

I am not in possession of the facts, necessary to a full *expose* of their therapeutick powers; but that these are so great as justly to place them at the head of all the known mineral springs, in the states bordering on the Ohio river, I have no doubt.

The cases to which they are, in a peculiar manner, adapted, are chronic inflammations, and obstructions in the abdominal viscera. Thus, they are, eminently serviceable, in such cases of dyspepsia, as are attended with subacute gastritis; in almost every kind of hepatic disorder, except when the liver is indurated, and, consequently, incurable; and in constipation, so constant an attendant on diseases of the stomach and liver. They are almost equally beneficial, in chronic inflammations of many other parts of the system—especially of the serous and fibrous membranes. In tonic dropsies, in rheumatism, and in various affections of the periosteum from febrile metastases, from syphilis and from mercury, they have often effected a cure, when other means had failed. In several urinary disorders they have done equal good. In chronic diseases of the skin, they have, also, been found useful, when the patient has been subjected to a regimen, that has determined them to the surface. In pulmonary complaints, they have been found serviceable; but not in the same degree, as in disorders of the abdominal organs; and their use in these maladies requires discrimination. In chronic pleurisy, and the early stages of subacute bronchitis, they have performed cures; but in vomica, tubercular suppurations, and hepatization of the pulmonary tissue, they are injurious; and, if persevered in, may even prove fatal. When they have rendered occasional assistance in these affections, it was chiefly by correcting a morbid condition of the digestive functions, so often associated with them. In sick headache they, occasionally, do good; but many cases of that obstinate malady, are attended with such an enervated condition of the nervous system, that their sedative operation becomes prejudicial. In headaches, dependent, however, on a phlogistic diathesis, they are salu-

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tary. Finally, in opthalmia, during the stages of acute and subacute inflammation—as long as depletives and sedatives are indicated—they may be relied upon as an efficient remedy.

It would be superfluous to cite other examples of their efficacy. The principle upon which they should be prescribed is obvious. Reducing the power of the heart, and acting as a diuretic, cathartic and sudorific, they are adapted to almost every case of inflammatory disease; while they are, contra-indicated, in most organic læsions, in exhausted states of the system from profuse discharges of every kind; and in all cases of broken up and ruined constitution. Of temperaments, the sanguineous and bilious bear them best: to the nervous and phlegmatic they are generally useless, not unfrequently offensive, and sometimes almost pernicious.

I have already indicated their *modus operandi*. Their influence on the circulation is, I believe, invariably that of a refrigorant and sedative. Their action on the kidneys is, in general, that of a powerful diuretic, in which the water itself, no doubt, performs an important, though not an exclusive, part. In the majority of persons, they, also, operate on the bowels, as a hydragogue cathartic; but those who are strongly inclined to constipation, or experience, in an uncommon degree, their diuretic influence, occasionally find it necessary to add to them a portion of the salts, which are prepared by evaporating the water, and are kept at the springs for that purpose. To determine them upon the skin, they should be taken, chiefly, at night; the patient lying in bed, with the surface of his body closely, but thinly covered. In these cases, two *small* matters require attention; for without an observance of them, the desired effect cannot always be obtained:

1. The forehead of the patient should be covered with a slip of flannel, as directed by Sydenham, when sweating is the object.

2. He should be left alone, or, at least, not be allowed to talk or read. If the waters be taken warm or hot, their sudorific effect will, in most cases, be greater, than if taken cold. Lastly, when all these means are unavailing, an opiate—

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for example, the pulvis Doveri—should be employed, and will, in general, be successful.

It is a common remark, that these waters do not oppress the stomach. This is not owing to the presence of carbonic acid gas, or any other æriform fluid; but to their passing the pylorus, or being drunk up by the veins of the stomach, very soon after they are received into that organ. It is to the stimulus saline matters which they contain, that their early exit from it should be attributed.

It is proper to say a word or two, concerning the saline mass, which is obtained by the evaporation of these waters. It is called Epsom salt; but it, obviously, contains all the fixed ingredients of the springs, and might, if dissolved in a large proportion of cold water, form a medicated beverage, equally useful with that afforded by the fountains themselves. Indeed a dilute solution of these salts, in water impregnated with carbonic acid, and cooled with ice, would constitute a mineral water more palatable, and, perhaps, more efficacious, than those of Harrodsburg. Of these salts, considered as a substitute, for the refined and crystallized sulphate of magnesia, of of the shops, it would be right to make a most favourable estimate. I am by no means convinced, that any thing is gained on the score, either of taste or effect, by substituting the purified Epsom salt, for one rendered impure by the admixture of other saline substances; and I know, that many persons who have tried both, prefer the latter.

As this paper may fall into the hands of some, who do not belong to the medical profession, and as my object is utility, it may be proper to add, that the Harrodsburg waters are not antacid, in the true acceptation of that term. They are, popularly, said to contain magnesia; and are supposed to correct acidity of the stomach, in the same manner as the calcined or the lump magnesia. This, however, is a mistake. But a small proportion of their magnesia is united with carbonic acid, into a carbonate, which is a real antacid; the bulk of it is combined with sulphuric acid, forming Epsom salt, which cannot unite with the acid of the stomach; but may

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prevent its reproduction, by correcting the disordered condition of that organ, which causes it to be generated.

There are other Epsom springs in Kentucky, besides those of Harrodsburg; of which the only one that has acquired notoriety, is situated ten or twelve miles from that town, and one from Perryville. It is named the

ROCHESTER SPRING.

It is a feeble but constant stream, that bursts out about 60 feet below the summit of a ridge of coarse grained, shell lime-stone. From the experiments and observations, which I have made upon this water, its sensible qualities, composition and effects, are so nearly the same, with those of the waters just described, that a detailed account of them would be superfluous.

OLYMPIAN SPRINGS.

In July, 1823, I spent a week at these springs, which constitute one of the oldest and most noted watering places of Kentucky; and what I shall say of them, is, chiefly, transcribed from notes made on the spot, at the time.

They are situated in Bath county, about 50 miles east of Lexington, on the waters of Licking river, which unites with the Ohio opposite Cincinnati.

On approaching them from the west, the country undergoes a change in its topography, geology and botany. The gentle slopes that give such beauty to the basin of Elkhorn, and the "country roundabout," of which Lexington is the metropolis, are succeeded by high and steep hills, the summits of which are narrow and serpentine. This is the commencement of the broken country; which, becoming more and more alpine, as we advance to the east, at last terminates in the Alleghany mountains. With this change of aspect, there is a corresponding change of structure. This first shows itself, on approaching Slate creek, between Mountsterling and the springs, where we observe strata and beds of arenaceous lime-stone, alternating with the blue, shell lime stone just passed over, and presenting organic remains of a different kind. The proportion of this new variety rapidly increases

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as we advance; giving indication, at every step, of the transition which is at hand. This is to shale, slate-clay and sandstone; all of which are soon visible *in situ*. By the time we reach the springs, they become the predominant rocks, and the limestone which, just before, was seen imbedding them, now becomes the imbedded mineral. With the blue, shell lime-stone, the *arbustum terræ fertilis* disappears, and is replaced by the chesnut, quercitron oak, mountain chesnut oak, persimmon, pine, red cedar, and other trees, and shrubs not found in rich and marly soils, with a corresponding change in herbaceous vegetation. Thus the observing invalid finds himself transported, in a single day, into the midst of objects and aspects which are both new and curious.

As the study of nature, with the eye of poetry or of philosophy, may alleviate many of the ills, either real or imaginary, (if, indeed, the latter can have an existence) which impel us to visit watering places, it will not, I trust, be regarded as unprofessional, to furnish distant invalids with a rapid sketch of what will be presented to their observation in this quarter.

The valley in which the springs are situated, is expanded, at the place where they arise, to the breadth of half a mile; and depressed about 300 feet below the surrounding hills. A branch of Beaver creek meanders through it, and contributes to sustain the luxuriant and succulent vegetation, which overspreads all the alluvial grounds of the West. The view of this spot, on approaching it, is pleasant and picturesque. The surrounding country is broken; but the traveller has not yet passed over the most rugged part. This lies before him, and stretches forward to the east, without any visible limits. Immediately beyond the valley, he observes the hills to rise in greater elevation; and, destitute, in their precipices, of arenaceous lime-stone, to exhibit little else than shale and slate-clay, the latter of which, within an hour's ride, graduates into stand-stone. Two miles from the springs, in the direction of which I have spoken, is a detached and somewhat conical summit, that has received the name of Olympus. It may be regarded as a specimen of the region adjoining, and still further east. The road to Beaver creek Iron works,

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passes near the base of Olympus; and, at length, ascending from the valley, the observer finds himself at an elevation of of 6 or 800 feet; and sees around him nothing but deep and angular vallies, mural precipices, and rocky summits; which resemble ruined fortresses and towers. The ascent to many of these, is impracticable; but others may be scaled, and will reward the enterprise with views, which, to the inhabitants of a flat country, appear of no ordinary sublimity; while the coolness and freshness of the passing breezes, cannot fail to afford him relief from the enervating influences of a mid-summer sun. From one of these observatories I saw, in a neighboring valley, a rainbow, every part of which was beneath my feet. On the whole, however, the visitor should not expect many alpine phenomena—though his feelings will be pleasantly revolutionized by the wildness, novelty, and grandeur of the surrounding scenery.

The most interesting and valuable mineral of this region, is argillaceous iron ore, which exists in extensive beds, near the surface, and is smelted, at two or three places, on Slate and Beaver creeks.

A district of country so rugged and unproductive, has of course a thin population; and game is consequently not very scarce. The valetudinarian, therefore, who delights in hunting, has an opportunity to engage in it, with a good prospect of success; but without following him over the crags and fallen pines, which he must encounter, let us come to an examination of *the waters*, which have chiefly attracted him thither. These are supplied by several springs and wells; which present such differences in their composition, that of all the watering places of the west, this is supposed to afford the greatest variety.

I could not myself detect more than three kinds—a salt and sulphur, a white sulphur, and a chalybeate.

1. The salt and sulphur water is pumped up from a shallow well, near the margin of the brook. The temperature of the water as it issues from the pump is 58° of Fahrenheit. Its taste is that of a weak brine, moderately charged with sulphuretted hydrogen. Compared with the greater num-

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ber of salines in the western country, the quantity of common salt which it contains is small, and the sulphuretted hydrogen is too little to escape from the surface in bubbles. When the neighbouring stream is swollen, its waters find their way into the well, which then affords a more dilute solution. It was in this state when my observations were made.

Subjected to the action of a variety of reagents, it afforded the following results; which, however, I do not state with confidence, in their accuracy.

1. Sulphuretted hydrogen.
2. Muriate of Soda, or common salt, and perhaps a little muriate of lime.
3. Carbonate of Soda.

I could detect no sulphuric acid, and, consequently, it contains no Epsom salts; and if either lime or magnesia be present, the quantity is exceedingly small.

2. The white sulphur spring, is situated half a mile from the well. It bursts out from a bank of shale, a short way up the side of a hill. Mr. Bankes, of Mountsterling, assured me that this spring made its first appearance during the earthquakes of 1811. Its temperature is 59°. Its composition is substantially the same with that of the well just described, but the ingredients of the two vary in their proportions. In the sulphur spring, the quantity of that substance is so great as to be deposited in the form of a whitish sediment upon the leaves and twigs which the water flows over; silver is more speedily tarnished than in the well; and the proportion of sulphuretted hydrogen, is sufficient to rise in bubbles to the surface; but still it is much less than in many other springs in Kentucky. On the other hand, the spring has but a weak impregnation of muriate of soda, compared with the well. The proportion of carbonate of soda seemed to be nearly the same in both. I could not detect in it, either sulphuric acid, or magnesia. The existence of iodine in sulphuretted waters, not having at the time of my visit, been made known, I did not of course, examine for them.

3. The chalybeate springs. These are two in number; and are situated about 40 yards apart; and half a mile from

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the salt and sulphur well. They burst out from between strata of arenaceous limestone, near the bank of a stream which a mile below mingles its waters with those of the brook already described. Their temperature, as the water issues from the rock in lively currents, is 52° of Farenheit. They deposit a reddish sediment. From a variety of experiments, on the water of the lower of these springs, I was satisfied that it contains nothing, but the carbonate of iron, with the proportion of muriates and carbonates, which our common springs afford. I observed the bottles, in which it was carried to the lodges of invalids, to be incrusted with the red oxide of iron, from the decomposition of the carbonate of that metal, and the escape of the carbonic acid, by the agitation. Thus many who thought themselves in the use of an efficient chalybeate, were drinking a water, which contained little else, than what exists in ordinary springs.

Besides the fountains, which I have described, there is another—a feeble vien—near the principal well, and called the *Vitriol spring*. It seemed to contain muriates and carbonates only, and these in such moderate quantities, that it is used for culinary purposes, although spoken of as medicinal. I could not discover in it, either sulphur, magnesia or sulphuric acid.

As I shall have immediate occasion to speak of saline-sulphuretted waters, more potent than those of the Olympian valley, and of a chalybeate spring more noted, than those I have just described, I shall say but little in this place of their curative powers. The following are the principal observations which I made on the spot.

The salt and sulphur water was chiefly drunk. From 1 to 8 tumblers full, were taken in the morning. It lay light on the stomach. Its diuretic effect was prompt and certain. Its action on the bowels was in most cases so inconsiderable, that common salt was added to increase its aperient qualities; and many persons found it necessary, besides, to dissolve in it a portion of Epsom salt. To some dyspeptic stomachs it was oppressive, even, in small quantities; and in one delicate female I saw it produce a tendency to syncope. In many persons it produced abdominal distension; and a few thought it

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the cause of more obstinate constipation, which arose perhaps from its great determination to the kidneys.

During my week's residence at the springs, I saw no invalids in a rapid state of recovery; nor heard any speak with applause of the beneficial effects of the water upon them. It is certain, however, that many interesting cures have been effected by it; although less powerful than some other springs of the same kind.

The water of the sulphur spring has been but little used, and its effects have not, therefore, been ascertained. They cannot differ materially from those of the water from the salt well.

The chalybeate spring seemed to be an object of secondary interest, and the resort to it was comparatively limited. Its effects, of course, are those which belong to all springs, impregnated with the carbonate of iron.

In summing up the particular advantages of a journey to this watering place, I would say, that they resolve themselves into the variety of waters in which it abounds; and into the novel objects and romantic scenery which it presents.

Blue Licks.

At this watering place there are several fountains, all, however, of one kind, the salino-sulphurous. They are found on either bank of Licking river, 24 miles from the Ohio, and at the intersection of the former, by the high road, that leads from Maysville to Lexington. From the first settlement of the state till within the last 15 years, salt was manufactured at this place. The manufacture was rendered unprofitable by the increasing scarcity of fuel, and by the discovery of stronger water in western Virginia and Pennsylvania.

In many respects, the region about the Blue Licks, is one of the most remarkable in Kentucky. Its destitution of soil is such, as make it quite a phenomenon, to all who have been reared in the fertile parts of the state. For miles in almost every direction, rocks overspread, with mosses and lichens, cover the surface, which sends up little else, than stunted oaks, red cedars, briers, and sumach bushes. These rocks

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belong to the formation of blue shell limestone, which prevails so extensively in Kentucky,—they are, indeed, its upper strata, broken into fragments and left in place. That they once had a covering of loam and soil, like the other parts of the state, cannot be doubted, inasmuch, as we find spots upon which it is still retained. As my object is to depict the aspects of nature, instead of developing the causes which produce them, I shall bestow but a passing remark on those which have presented us with this surface of barren rocks, in the midst of such prevailing fertility.

The first adventurers to Kentucky, found the Blue Licks, the resort of almost every species of quadruped which dwelt in its forests. The herbivorous came to drink the waters and lick the soil, coloured blue by the sediment which they deposited; and the carnivorous, frequented the same place, to prey upon them. The number of deer, elk, and bison, was almost incredible. The last, especially, came in vast herds from distant parts of the country, forming roads, some parts of which are still visible. This, therefore, was a watering place from time immemorial; and judging from the osseous remains which have been dug up, the most ancient visitors of the spot, were the mastodon and arctic elephant. At certain seasons of the year, the bison, from a distance, were in the habit of sojourning at this place for weeks; and subsisting on the shrubs and herbaceous plants of the surrounding hills. To this destruction of the vegetables, which in all rainy and broken countries, are necessary to the stability of the soil, and to its being trodden up when wet, we may safely attribute, its descent into the valleys, and the consequent exposure of the rocky strata underneath.

Since the manufacture of salt has been discontinued, and fuel is no longer required, many parts of this little region, from which the trees had been cut down, have shot up dense groves of red cedar and sumach, which, in the absence of inhabitants, give to them the aspect of an infested wilderness. Such is a sketch of the scenery and ancient history of the Blue Licks. The invalid of romantic sensibility cannot but find at them, when, personally contemplated, not a little to

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interest him; while those who are curious in their inquiries into the predatory wars, which the first settlers of Kentucky were compelled to maintain, with the Indians, will have an opportunity, within two miles of their lodgings, to view the spot on which a most bloody battle was once fought. I will only add, that to those who are fond of fishing, the river affords opportunities for angling, which are not to be enjoyed at any other public watering place of the state.

The Springs themselves, are more copious than the Olympian, just described; the water is much salter, and sparkles briskly, with sulphuretted hydrogen gas. Much of it is taken, in barrels, to the surrounding towns, even to Lexington—a distance of 40 miles—where it is held in good estimation. When kept in this manner, however, the dissolved sulphuretted hydrogen escapes, and the sulphur, remaining suspended or deposited on the sides of the vessel, gives to the water a more offensive taste, than it has at the springs, while its medicinal virtues, are no doubt diminished. Of these I shall not speak, till I have given some account of another watering place of the same kind; and the last which I shall describe in Kentucky. It is

Big Bone Lick.

This spot has acquired a notoriety that is not even limited to the United States. Its name explains the nature of this distinction. No place in America, perhaps none in the world, has afforded an equal number of large fossil bones, of which the most conspicuous, belonged to the mastodon and the northern elephant, though the whole are included, by the people, under the designation of Mammoth bones. They were enveloped in the mud of a narrow valley, through which the salt and sulphur water rises in a number of streams, some of which are copious. Through this valley, a stream descends from the surrounding hills, and mingles with the Ohio, at the distance of 2 or 5 miles. When the river is swollen, however, the 'backwater' is found quite at the springs. They lie in Boone county, 22 miles from Cincinnati by land, and twice that distance by water. The surrounding hills are romantic, but there is no distant perspective, and although

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the scenery is superior to that of Harrodsburgh, it is inferior to the Blue Licks or Olympian springs. The deepest interest which the spot can inspire, arises from the osseous relicks, which its alluvial deposites afford.*

The Waters of this valley were once evaporated for salt, but the manufacture has been discontinued. They afford a larger quantity of muriate of soda or common salt than those of the Olympian springs, and abound in sulphuretted hydrogen gas, which is incombustible. They contain muriate of lime which also exists in the Blue Lick water and probably in the Olympian; and which, when salt was manufactured at those places, constituted a *bittern* that proved poisonous to cattle. They, likewise, contain a sulphate; but whether of soda or magnesia, I had not the means, when there, of ascertaining. They have not been tested for iodine. In a notice of the waters of Big Bone which I inserted in the picture of Cincinnati, in 1815, it is erroneously stated, that they contain gallic acid. The colouring of certain metallic precipitates, which I attributed to that acid, was no doubt owing to the sulphuretted hydrogen. They contain no iron.

* The first huge fossil bones ever taken from America to Europe, (unless some of those described by Dr. Cotton Mather, the early historian of New-England, as the bones of antideluvian giants, might have been carried from the colonies to the mother country) were found at this place; and some of them fell into the hands of Dr. William Hunter. This was about the middle of the last century. Since that time the spot has been explored, like another Herculaneum, and its disinterred relicks, have been disseminated over more countries, than the lost animals, perhaps, ever inhabited. The principal collections have been disposed of in the following manner. 1. That made by my precepter Dr. Goforth, in 1803 was, credulously, confided, in 1806, to the infamous, English traveller Thomas Arville, alias, Ashe, to be exhibited, in Europe. On his arrival at Liverpool, he sold on his own account, the entire collection, to Mr. William Bullock, who soon afterwards transferred his Museum to London. A part of them, were exchanged, by him, for other subjects of natural history, with the curators of the Royal College of Surgeons; a few were presented to Dr Blake of Dublin, and to Prof. Monro of Edinburgh; and the remainder were sold, with his other curiosities, at auction. 2. The collection made by order of Mr. Jefferson, as President of the American Philosophical Society, about the year 1805, was divided between the society, and M. Cuvier, the Naturalist of France; who received the most interesting portion of them. 3. The acquisitions made, by the Western Museum Society in 1819, are now in the Western Museum. New explorations would, no doubt, show that many bones yet remain, as Mr. Letton has, within the last two years, added a number, to the Cincinnati Museum.

It is not unworthy of remark, that Mr. Bullock, is now a landed proprietor and resident, of the same county, in which Big Bone is situated.

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The Modus Operandi of the Big Bone and Blue Lick waters is identical, and not materially different from those of the Olympian springs, and of Harrodsburg They are more energetic in their action than the former, and more pervading in their effects than the latter. Thus, it is not difficult to direct them to the skin; and it frequently happens, after their use for a few days, that an eruption takes place, and boils, of different sizes, form in the subcutaneous cellular tissue. These effects are especially experienced by those who bathe in them, hot. Like the Harrodsburg waters, they lower the pulse, augment the urinary secretion, and produce copious liquid alvine dejections. To obtain the last effect, however, many persons are compelled, in the early stages of their residence at the springs, to resort to magnesia or Epsom salt. They increase the appetite, and do not oppress the stomach by their weight, except when that organ is greatly debilitated; but they frequently excite gastric acidity, in the dyspeptic. It would seem that they should increase the secretion of bile, but I have not been able to satisfy myself that this is the fact during their use: the great dilution to which the excreta are subjected, may, however, have led to this uncertainty. I have not often seen invalids much benefitted by them, until after their return home. A period of better health, then, in general, succeeds, provided, the remedy was adapted to the disorder. In a case of subacute trachitis, I saw them effect a cure; but in true pulmonary consumption, and in scrophula, except in the early stages, they are prejudicial; and might prove fatal, if used at a late period. In chronic affections of the liver, in cutaneous disorders, and, in many cases of amenorrhœa, they are signally serviceable. In chronic rheumatism, they have often done good. Where relief from a costive habit is the object, they should be used for several weeks, when they will often prove effectual. To enumerate all the cases to which I suppose them to be adapted, and in which they should be forbidden, would require ampler opportunities for observation than I have possessed; and in a paper addressed, chiefly, to the profession, would, perhaps, be unnecessary. I shall, therefore, dismiss

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the subject of their medicinal effects, and close my notice of the watering places of Kentucky, by a few remarks on their relative salubrity and comforts.

Kentucky, like the other States of the Union, has its summer choleras and autumnal fevers; and, although these, in common years, prevail every where, it is undeniable that some parts are more affected than others; especially with the latter class of diseases. Now, when the waters of the five situations which I have described, are so nearly alike in their effects, that the invalid might choose with reference, chiefly, to the healthiness of the place where he must sojourn,—which place should he select? As a witness in the interests of patients, and not of proprietors, I have no hesitation in testifying in favor of Harrodsburg and Rochester, over the Olympian Valley, Blue Licks, or Big Bone. The invalid resides, at either of the first, on dry and elevated ridges; at all the others, in deep and humid valley. Bilious fevers may occur, with fatal malignancy, at the former; but they are still more likely to happen in the latter, while ague and fever, which so seldom prevails on the ridges, almost annually infests the valleys, from the beginning of September, till white frosts have set in.

Further. In the facilities which they afford for taking carriage exercise, Harrodsburg and Rochester have an equal advantage over the other watering places of the state; and a like superiority might be awarded to them, especially to the former, in reference to the society afforded by the surrounding country. As to the society at the springs themselves, it will in general be nearly the same, throughout the whole. Creating itself, *de novo*, in every succeeding summer, it must of necessity be according to the new elements, which compose it; and over these no individual can exercise either physical controul, or moral supervision. It has, however, an adjunct which the proprietors might prune away; and it is to be regretted that they do not emulate each other, in the work of reform. I refer to the gaming machines, and gambling banditti, who periodically infest these places. They call off the attention of husbands, fa-

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thers, and brothers, from those whom they had conducted thither for health; they draw the unwary into their snares with the greater facility, because of the idleness which prevails at such places; in fine, the very rumour of their presence, is offensive to the taste and feelings, of moral and religious invalids; and has often banished them from the springs, before a proper trial was completed. Let it not be said that, in these strictures, I am travelling beyond the limits of a professional paper. Medicine is no longer the art of astrology or coscinomancy; but a liberal science—comprehensive, searching, exhortatory: embracing in its periscope the entire moral and physical man: flourishing most in the bosom of the highest civilization: casting its glances into all the natural sciences, and useful arts—upon social institutions, morals and religion: correcting abuses, rectifying errors, exposing absurdities: discovering every where the semina of diseases, and pressing into its service, the circumstances of the moral world, not less than the productions of the natural. The fabulous Argus, with his hundred eyes, would not be an inappropriate emblem, for a profession which must explore all the labyrinths of nature, and contemplate every aspect of society.

Before taking leave of Kentucky, I ought to add, that among its springs, not yet extensively known, is one only four miles from Cincinnati, which is said to be of the same composition with those of Harrodsburg. It is situated in a healthy spot, and has, already, though of recent discovery, attracted considerable attention. In an early number of this Journal, I shall publish a further notice of it.

The geography of Ohio, not less than its institutions, differs, in several points, from that of Kentucky. With the exception of its S. E. portion, and its southern border contiguous to the river, it is much leveller than Kentucky. Its valleys are generally of great width; and it has extensive plains, either horizontal, or slightly inclined to the north or south, according as the streams which traverse them, tend to Lake Erie, or to the Ohio river. In its geology the differences are,

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also, considerable. The hilly portions east of the Scioto river, in the southern part of the State, abound in shale and sand-stone, with salt, iron and coal; being, in fact, a part of the same formation in which the Olympian springs, of Kentucky, are situated. The other parts rest on blue shell, and arenaceous lime-stone, like the northern portions of the sister State; but the former has its laminæ separated by blue, stone, marl, which, in many places, becomes the predominant rock; and, greatly disposed to crumble down, has offered to the waters an easy conquest; and hence, in part, the extraordinary width of our valleys. It is, however, near the surface, that the greatest dissimilarities in the geology of the two States are to be found. Kentucky has, nearly every where, a thin covering of loam; its streams generally flow in narrow valleys, and it is, almost, without alluvial deposites—at least of sand and foreign, rolled pebbles. In Ohio, on the other hand, the rocky, calcareous strata are, in general, deeply buried up in loam; and in its expanded valleys, the quantity of water-worn rocky *debris*, both indigenous and exotic—to borrow the terms of a kindred science—is almost incredible.

The mineral springs of Ohio are numerous, though not greatly diversified in their properties, nor copious in the supplies which they afford. But few of them have yet attracted the attention of the profession, or been made places of public resort. In the shale and sand-stone region, there are salines; but I am not aware that they are frequented by any great number of invalids. The most common mineral waters of the State, are chalybeate. Feeble veins of this kind are every where met with, along the banks of our alluvial streams; and are, evidently, formed on the spot, by the percolation of rain water, through deposites abounding in vegetable recrements, and supplying oxide of iron and carbonic acid. Our arenaceous lime-stone, affords a water of the same composition, in large and perennial streams. Of these, one only, has, in any degree, fixed the attention of the public; and to it, as the only watering place of notoriety, in Ohio, I shall confine my remarks.

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The Yellow Spring

Is situated in Green county, 64 miles north of Cincinnati, and 2 miles west of the Little Miami river. It is a copious and constant fountain, that issues from between strata of arenaceous lime-stone, and thus has geological characters, perfectly identical with the chalybeate springs, of the Olympian valley, in Kentucky. It bursts out near the summit level of that quarter, but is soon precipitated into a wild ravine, more than a hundred feet in depth. On its way, thither, it has, in the course of ages, deposited a great bank, of reddish yellow ochre, which is intermixed with twigs and leaves of trees. The temperature of this fountain is 52°—precisely that of other springs in the neighbourhood, which afford a great supply of water, and issue from crevices in the rocks. The water is transparent, does not sparkle, and has a slight chalybeate flavour; but it gives very little offence to the taste, and is used for a variety of domestic purposes. Its component parts are those of all the springs of a lime-stone country, with the addition of proto-carbonate of iron; or the black oxide of that metal, dissolved by the agency of carbonic acid; which, however, is not in such quantity as to be emitted in bubbles. After the water has left the aperture from which it issues, a portion of the gas combined with it escapes, and a part of the oxide of iron, passing from the first to the second degree of oxidation, is deposited,—constituting the ochreous sediment, of which I have spoken. When the waters are transported to a distance, the same thing occurs; and if they be carried far and much agitated, the oxide of iron may be so entirely thrown down, that the most delicate tests will scarcely indicate in the water, even a trace of that metal.

Of all the sensible effects of this water, its diuretic are the greatest; but whether, in reality, they are much more considerable, than those of common water taken in the same quantity, may be doubted. As a laxative, its powers are very small. It has no necessary determination to the surface of the body. Taken even in large quantities, it does not oppress or embarrass the stomach; but improves the health of that organ, sharpens the appetite, augments the powers of digestion, and increases

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the general strength. To obtain from it, however, these salutary effects, it is necessary, by means of Epsom salt or magnesia, to maintain a regular habit of body. By adding the former to it, in the proportion of a tea-spoonful to the quart, a valuable laxative and tonic medicine is obtained.

The cases, to which this spring is adapted, are not those which require the waters of Harrodsburgh or Big Bone. It will not reduce inflammation; and, if there be unsubdued and smothered fires lurking in any of the organs of the system, they must be extinguished, by a saline water, or some other means, before the invalid ventures to the Yellow Spring. Its waters are, indeed, rather restorative than curative. They are admirable for convalescents. They belong to the class of tonics; and if not the most potent, are among the most pleasant. In many cases of dyspepsia, morbid sensibility of the stomach and bowels, torpor of the liver, atonic dropsy, hysteria, hypochondriasm, and other nervous affections; in the exhaustion from profuse evacuations; in the debility consequent upon fevers; and, finally, in most cases of enervated and broken up constitutions, they are likely to produce effects the most beneficial.

As a place of residence for the *three summer months*, the Yellow Spring has much to recommend it. Being the most northern watering place of the west; and, elevated more than 800 feet above the level of New-Orleans, it offers as cool a retreat for itinerant valetudinarians, as can be had short of Saratoga; while from its topographical circumstances, it should be a healthy situation. After the first of September, however, its nights become uncomfortably cool and damp; when visiters from the south, may as a general rule, prepare to leave it. My own opinion is that in September and October they are more likely to enjoy good health in the city, than out of it.

The country, about the spring, is so level, as to permit the invalid to take exercise in various directions; and the villages of Xenia, Springfield, and Dayton are all within his reach. He may visit the two first and return on the same day. Of natural scenery, he will be presented.—First with the valley, into which the spring discharges its waters. The brook that

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flows in this wild and narrow channel, falls over many successive ledges, constituting a series of little cascades; while its margin is fringed, (or formerly was) with a variety of beautiful shrubs, whose broad and heavy foliage, affords an agreeable contrast with the slender leaved cedars that adorn the cliffs of arenaceous limestone rocks above. Secondly, with prairies, many of which exist not far north of the spring, and display in the splendor and variety of their summer flora, enough to delight all, who have a taste for the contemplation of nature's fine arts. Thirdly, with the falls of the Little Miami, which are two miles from the spring. They will be found an interesting curiosity. The water falls in the course of a mile or two, not less than 200 feet.

"The stream is seen entering a chasm in the arenaceous limestone rocks, which underlay that quarter; in the course of a mile it is precipitated from several successive tables, when, being compressed to less than ten yards in width, it falls from a ledge of rocks, 6 or 8 feet, into a narrower fissure, of such great depth, that for several rods below there is no perceptible current. The sides of this fissure, which rise by estimation 50 feet above the surface of the water, are irregular, but correspond in such a manner as to suggest that they were formerly in contact. From this point, the rapids continue more than a mile. The chasm, widening and deepening, gradually terminates in the broad valley through which the stream afterwards flows, in the Ohio. These effects seem to have resulted from the action of the current below, and the expansion of freezing water in the fissures above, which, operating in conjunction, have covered the steep acclivities with enormous masses of rock, whose former situations are still visible. These fragments and the superincumbent cliffs are decorated with four different evergreens—the Red Cedar, Canadian Yew, Hemlock and American Arbor Vitæ, interspersed with several other common trees and shrubs, which give to the scenery an aspect equally beautiful and romantic."—*Picture of Cincinnati—p. 35.*

It has not been my design to speak of the accommodations provided for invalids, at the different watering places of the west; but as they have heretofore been exceedingly limited at this spring, it may be proper to say, that they have recently been made every way correspondent to the natural comforts and advantages which are offered by that place.

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With these remarks I close, a paper, written in too much haste to be made concise; and perhaps abounding too much in references to scenery and geological appearances to meet the approbation of the *severe* cultivators of our science. I cannot in conscience offer it, as a model, to my brethren of the west; but hope it may stimulate some of them, to deeper researches and happier efforts on the same subject.

Cincinnati, June 24, 1828.

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MISCELLANEOUS INTELLIGENCE.

1. ANALECTIC

1. *Peculiar Disease of the Heart.*—Our readers will remember that, within the last year, we described three or four cases of a peculiar disease of the heart—one in the person of the late celebrated Talma—another, from our own practice, the case of the late General Kyd; and one by Cruveilhier. The indefatigable Breschet has dedicated a long article to this subject in the last number of the REPERTOIRE, in which he has collected nearly a dozen of instances of this very curious and rare disease. We shall endeavor to seize the more interesting particulars of this paper for the information of our readers.

1. The first case which M. Breschet has been able to find on record, is one related by Walter, the father, in the year 1759. The patient was a merchant, 50 years of age, who had, for many years before his death, complained of præcordial anxiety and palpitation of the heart. A pouch was found arising from the left ventricle.

2. After alluding to Dr. Baillie's case, the following is detailed from Zannini, published in 1816. A gondolier at the age of 19 years, fell and bruised his chest. At the age of 25, he became affected with a complaint of the chest, attended with pain in the side, difficult breathing, cough, and bad expectoration, which symptoms were relieved by bleeding. Soon after this, he felt, for the first time, a pulsation in the *right* side of his chest, attended with a sensation as if a body was moving up and down there. He continued his avocations, and drank much wine. Two years afterwards, he became annoyed with a pain in the region of the heart, which was relieved by bleeding, but continued to return from time to time, especially on using much exertion. He had a disagreeable pulsation at the pit of the stomach. He lived two years in this condition, still pursuing his avocations, when his suffering were a little mitigated. Having attained the age of 29 years, he suddenly expired one day while making some corporeal exertion, after eating rather heartily.

On dissection, the lungs were found healthy. The pericardium contained a few ounces of yellow serum. From the left ventricle of the heart there went off a pouch, the size of a man's fist, which was adherent to the pericardium. This tumour opened into the cavity of the ventricle, and contained coagulated blood. The parietes of the aneurismal production varied in thickness, from three quarters of

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an inch to an inch and a half. There was nothing else particular in the dissection.

3. This was a negro, who was received into La Charite, on the 17th October, 1796, in the agonies of death. He died the next day, after a most profuse nasal hæmorrhage. On dissection, it was observed that the heart was of its natural size; but, from the left ventricle, there went off a tumour, nearly as large as the heart itself. The parietes of this aneurismal tumour were of a cartilaginous consistence, although they preserved the appearance of muscle. The interior of the tumour presented several albuminous layers, of considerable density, exactly resembling those seen in an arterial aneurism, except that they were more pale. The cavity of the tumour communicated, by a rather small aperture, with that of the ventricle. The aneurism appeared evidently to be formed between the muscular substance of the heart and its pericardinal covering. The mitral valve was thickened and ossified. This case was recorded in the second edition of Corvisart's work. Laennec never saw an instance of the disease, and only touches on the subject, placing the disease under the head of "Dilatations partielles du Cœur."

4. Two cases of this malady were observed by M. Berard, in the dissecting room of La Charite, and whose histories were therefore, unknown. The second of these cases offered some remarkable phenomena. The man appeared to have been about 55 years of age, and the body was very fat. On opening the chest, the pericardium presented a most enormous size. The heart was prodigiously dilated, and, at the same time thickened in its parietes. From the summit of the left ventricle there went off an aneurismal pouch, whose interior was covered with concentric layers of organized coagulable lymph, but not of very long standing apparently.

5. The case which we gave in No. 14 of this Series, page 401 as related by M. Cruveilhier, is next introduced by M. Breschet, and this we shall, of course, pass over.

6. The next instance came under M. Breschet's own observation. On the 27th of March, a soldier, aged 49 years, was received into the clinical ward, stating that he had suffered, for six or eight months, from oppression and want of breath, especially on using exercise. The limbs and belly were now infiltrated—he was unable to lie down in bed—the left ventricle of the heart communicated a considerable impulsion to the cylinder, and each contraction was attended with a whizzing noise, (bruit de soufflet) which was very distinct, but which, however, diminished afterwards, and finally disappeared. The pulse was small, and sometimes unequal. Diuretics, purgatives, &c. were employed with the view of removing the consecutive dropsical swellings. On the night of the 18th May, the patient suddenly became insensible, and complete hemiplegia of the right side ensued.—Bleeding, leeching, &c. were used, but the hemiplegia continued, although some degree of the intellectual functions was restored. He died on the 23d May.

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Dissection. There was serous effusion between the membranes, and in the ventricles of the brain. The right corpus striatum was of a livid colour, and completely softened almost into a fluid. This softening was exactly confined to the corpus striatum, and no other morbid appearance was seen in any part of the brain or cerebellum. The heart was nearly double its natural size, and, from the left ventricle, a small pouch went off, such as has been described. The great size of the heart was occasioned by the dilatation of the left ventricle, whose parietes, however, could hardly be said to be thickened. The tricuspid valve was in a state of induration approaching ossification. The interior of the pouch presented concentric layers of dense fibrine. The liver was granulated.

7. The case of TALMA forms the next instance adduced by M. Breschet, but this has been already noticed in our own Journal.

GENERAL OBSERVATIONS AND CONCLUSIONS.

Our author remarks that the word *aneurism* has given rise to numerous altercations, discussions, and erroneous deductions. By this term have been understood various and essentially different diseases of the heart and of the arteries. It is also remarkable, that we have admitted the existence of certain morbid conditions of the heart which we have denied to the arteries and *vice versa*. Thus, every one will allow that the chambers of the heart may become dilated, with or without *thickening*—with or without *attenuation* of their parietes; but it has been denied that there can be an aneurism of the heart produced by rupture of the fleshy parietes, and dilatation of its membranous envelopes. In respect to the arteries, it has been contended that there can be no such thing as true aneurism—that is, a general dilatation of the whole cylinder of the vessel; but that, in all cases, there is a morbid condition of the inner and middle coats, with laceration of these tissues, and the formation of a tumour on one side of the vessel, in which is contained blood, or layer after layer of fibrine. Sennertus, Fab. Hildanus, and Scarpa, maintained this doctrine. But it is too exclusive. There can be no doubt that a diseased condition of the arterial coats, with partial laceration or dilation of them into a pouch, is the more usual form of aneurism; but to deny that there can be a general dilatation of the calibre of the vessel, without laceration or disease of the coats, is an error. In 14 examinations of aneurismal tumours, BURNS found but one in which the doctrine of Scarpa was impugned. Still this one exception in 14 cases proves that the rule is not exclusive. The present paper, and others which we have laid before our readers, evince that the heart is liable to the same kind of disease as the arteries—namely, partial attenuation, rupture, or dilatation of the parietes of some of its chambers, with the consequent formation of a pouch, containing coagulated blood, or layers of fibrine. Observation has proved, that these aneurismal pouches are almost always found to go off from the left ventricle of the heart. What can be the cause of this? M. Portal is of opinion that these pouches may form without any pre-

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vious disease in the parietes of the chamber. He thinks the disease is more the consequence of violent contraction, than of dilatation of the chamber. There can be no doubt that these pouches are often seen where the rest of the parietes are in a state of hypertrophy; but M. Breschet is of opinion, and we agree with him, that, in all probability, there is an inequality of power in the different parts of the chamber, previously to the formation of these pouches. It is very curious, however, that aneurism by dilatation should be extremely common in the heart, and comparatively rare in the arteries; while, on the other hand, the aneurism by rupture or partial dilatation of the parietes is the usual form of the disease in the arteries, and comparatively rare in the heart. The reason for this difference is not very apparent. M. Breschet has attempted to lay down some symptoms as tending to show the existence of this disease; but we consider them as quite uncertain—if not absolutely erroneous. It rarely falls to the lot of a medical man to see a specimen of this curious disease; but the one which we published—that of General Kyd, was not accompanied by any of those symptoms which M. Breschet mentions—indeed the patient never exhibited any symptoms during life, which indicated organic affection of the heart at all. Still we hold it extremely desirable that we should be acquainted with all the forms of organic disease that may be presented to our view in the course of pathalogical investigations; and with this view we have presented our readers with a succinct account of our learned author's paper on the above subject. The final conclusions to which M. Breschet comes are the following:

1mo. The heart is liable to be affected by a disease hitherto undescribed by nosographers or practitioners—2dly. That the disease is chiefly found affecting the left ventricle—3dly. That the *summit* of this ventricle is the principal seat of the disease—4thly. That the tumour is aneurismal. 5thly. That this aneurism, from the mode of its formation, the state of its parietes, and the parts contained in the cyst, may be considered analogous to the "false consecutive aneurism of arteries," in the sense employed by Scarpa—6thly. That the heart is liable to the same kind of aneurism which we commonly meet with in the arteries—a circumstance that might be reasonably expected, from their structure and functions.—Repertoir.—*Med. Ch. Rev. for Jan.* 1828.—p. 151.

2. *Intestinal Invaginations.*—Intestinal invaginations or intussusceptions are often seen in young subjects who have died of other diseases, and appear to take place in the act of dying, from some convulsive or inordinate movements of the muscular fibres of the intestines. They are thus, probably, of no consequence whatever. But when a portion of small testine is inverted into the colon—or when a portion of this last is inverted on itself, it becomes a very serious affair, and most generally fatal. It is with the view of furnishing some data for distinguishing this last and dangerous species of invagination, that M. Buet brings forward the two following cases, from the wards of Dr. Husson, in the Hotel Dieu of Paris.

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Case 1. On the 17th of April, 1825, there was received into the above-mentioned hospital, a man, aged 40 years, formerly a soldier, but now a tradesman. This man, of large stature, and strong constitution, presented the following symptoms when received into hospital: Abdomen very hard and distended, as well as painful on pressure, especially in the *left* iliac fossa, the *right* being rather depressed, and void of pain when pressed. The abdominal muscles appeared in strong action; pains in the loins: frequent eructations; vomiting of yellowish matters; constant inclination to stool; colicky and dragging pains in the belly; constriction about the throat. During the paroxysms of colicky pains, the left iliac region presented the figure of a large convolution of intestine, bent on itself. The poor man's countenance was indicative of great suffering; the tongue was furred; much thirst; slow pulse. The patient stated the following particulars of his illness. During ten years' sojourn at Rochefort, he had experienced several attacks of intermittent fever, which had been treated by vomits, purgatives, and tonics, &c. Afterwards, he was very subject to vomiting and diarrhœa. On the 20th December, 1824, after some muscular exertion, he felt, in the *right* iliac fossa, a very acute pain, followed by colick, vomiting, and purging. These attacks came on frequently afterwards, with intervals of ease. He had occasionally discharges of blood from the bowels. The means that had been employed were leeches, fomentations, demulcent drinks, and the like. M. Husson considered the case as hopeless, and that nothing could be done but soothe the remainder of the patient's days. Thirty leeches were applied to the anus, anodyne lavements were thrown up, and fomentations were ordered to the abdomen. Little or no relief was obtained by these means. On the 23d of April, while straining at stool, the patient felt as if something had given way in his abdomen, and; in a few minutes more, he became very ill, the abdomen becoming inflated, and exquisitely tender to the touch. He died at eight o'clock the same evening.

Dissection. The peritoneal lining of the abdomen was every where inflamed, but there was no extravasation. Patches of recent coagulable lymph were, however, numerous. The small intestines were excessively distended with gas. Neither the cæcum nor ascending portion of colon could be found; they were carried forward, and inclosed in the last half of the transverse arch, and in the sigmoid flexure of the colon, which was as thick as a man's arm, and hard or solid to the touch. On examination, the cæcum was found lodged in the sigmoid flexure, in the iliac fossa. The invaginated portion consisted, therefore, of three parietes, as may be easily conceived, from the mode of introversion, since a portion of ileum was necessarily carried in with the cæcum and ascending arch of the colon. The invaginated parts were agglutinated together, and, in some places, gangrene had commenced. There was nothing particular in the other portions of intestine, beyond the distention, which might be naturally expected above so serious an obstruction to the evacuation of the bowels.

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This case, M. Buet thinks, illustrates the effects of long-continued and drastic purgatives, to the intemperate use of which he attributes the invagination above-described. This case also shows, that an intussusception of great extent may exist for a long time, and yet a passage for liquid fæces may still obtain. Up to the day before the patient's death, he had fluid evacuations from his bowels.

Case 2. Pradier, aged 22, who had been in the hospital at Clermont, for vomiting and diarrhœa, with colicky pains, came to Paris, in July, 1825, in a very bad state of health, and entered the Hotel Dieu, on the 8th of August, under Dr. Husson. The patient's symptoms, at this time, did not portend the existence of so serious a malady as that which actually obtained. He had colicky pains and diarrhœa, with intervals of perfect ease, and his complexion was nearly natural. He was ordered emollient fomentations, diluents, and lavements. On the 12th and 13th of the same month, the symptoms were observed to be aggravated; the features were sharp; the pulse concentrated; and the iliac fossa of the left side was very painful on pressure. Leeches and opiates were prescribed. 14th. The pain was insupportable, and the patient felt as if something was tearing in his inside. He had nausea and vomitings, with spasmodic contractions of the fingers and other parts. 16th. Symptoms of peritoneal inflammation were evident, and leeches in great numbers were applied; but the disease went on unchecked, and death terminated his sufferings on the 18th of the same month.

Dissection.—The peritoneum was highly injected, and there were numerous adhesions and false membranes seen in different parts, but no effusion of extravasation. Neither cæcum, ascending or transverse arch of the colon, could be found. The descending portion was as thick as a man's arm, and very hard. On performing moderate traction, it was easily discovered that the cæcum and ascending and transverse arches of the colon, together with a portion of ileum, were engulphed in the descending portion of the colon. The cæcum was found in a state of gangrene.—*Archives Generalis.*—*Ibid.* p. 156.

3. *Endermic Medication.*—In spite of all the controversies which have taken place respecting the existence of a capability in the vessels of the skin to absorb substances applied to them—the general conviction, supported now by incontestable facts, is, that such absorbant power does actually exist—especially when the epidermis is removed. The method of introducing medicinal agents through this channel is by no means a mere matter of physiological curiosity. It may be turned to great advantage in many cases, where there are strong objections to the administration of medicines by the mouth. Thus, a person may become the subject of ague while labouring under chronic inflammation of the stomach or bowels—and, consequently, where bark or arsenic would be injurious. In such a case, the sulphat of quinine may be applied to the denuded surface of a blister, and the ague will be stopped without any irritation being

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given to the stomach or bowels. Again, in cases of children, who have a natural repugnance to medicines, and especially to bitter medicines, the endermic medication offers a very convenient resource.

In a late Number of the Revue Medicale, the younger Martin has published several cases of intermittent fever, treated, at the Hotel Dieu, by sulphat of quinine, applied with cerate to blistered surfaces. At first, he applied the powder over the denuded cutis, but it occasioned too much irritation, and the paroxysms were not stopped. He then mixed the quinine with cerate, and the object was obtained, without any local inflammation or pain being produced. A single case in illustration will be sufficient for our purpose.

Case. Leon, a soldier, of the 1st regiment of Light Infantry had been in the hospital upwards of four months, when M. Martin took his turn of duty, on the 1st of December, 1826. He had had a pernicious remittent fever, attended with several relapses, by which he was reduced to a state of great debility and emaciation. He was also affected with dry cough, and was compelled to keep his bed, from the general state of marasmus to which he was brought by his disease. By proper means, the cough was mitigated, and the patient began to recruit a little, when, on the morning of the 20th December, he was seized with a regular fit of ague, which left the cough in a state of exasperation. The next day, being apyrectic, a blister was applied to his arm. On the third day, in the morning, the blister was removed, and the surface dressed with cerate, in which was incorporated six grains of the sulphat of quinine. That day the paroxysm was much milder, and at somewhat a later hour. The quinine was continued, six grains daily in the cerate, and fever returned no more.

We need not multiply cases, as the foregoing presents an example that will be easily imitated, where it is deemed necessary. We apprehend that this plan may be applicable to a great many morbid conditions of the system, where the internal administration of remedies would be inconvenient.—*Ibid.* p. 158.

II. ORIGINAL.

4. *Report on the Weather and Diseases of Cincinnati, in the Spring of* 1828. The mean temperature of Spring, at this place, according to observations made for five years in succession, is 54° 29; which is within the fraction of a degree, of the mean heat of the year. For the period just named, the mean heat of each month was as follows: March 43° 97, April 57° 58, May 61° 32, from which results the mean temperature just stated.

The spring is, generally, supposed to present greater extremes of temperature, than the other seasons; but, at Cincin-

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cinnati, they stand, in this respect, in the following order: Winter, Spring, Autumn, Summer. From observations for a a series of years, the thermometer may be expected to fall in March to 16°, and rise to 72o—in April to 28°, and rise to 84°—in May to 40°, and rise to 88°;—and, if it should not descend and ascend to these numbers, it ought to be considered that the variations are unusually moderate.

Our vernal winds are chiefly S. W., N. E., N. W., S. E. and W.—prevailing in the order in which they are here enumerated.

In the number of its fair days, our Spring occupies the following place in the catalogue of the seasons: Summer, Autumn, Spring, Winter.

In its progress, this season appears to be governed by no constant law; for in different years, it presents a very great variety in all its characteristics. Sometimes it is cold and rainy. Our deepest snows are, occasionally, in March; and snow, sometimes, falls, copiously, as late as the middle of May. March is subject to long continued rains, with north east winds; April is, generally, productive of showers, many of which are extremely abundant; May is, almost always, rainy at the close of its first week, and immediately afterwards brings frost. Its latter half is generally hot and dry. Now and then the whole vernal season is dry. It would not be loose phraseology to say, that winter and summer do not much respect the divisions of our calendar; for the former not unfrequently runs far into March, and the latter, still oftener, commences by the 20th of May. On the whole, our Spring is like a sitter, who does not retain the same aspect long enough, to suffer a portrait of definite character to be painted of him.

The Spring of the present year was rather cool and wet, than otherwise. The former quality might have been anticipated, after so mild a winter; but the latter could scarcely have been expected to follow so much rain, as fell in January and February.

Its prevalent diseases were the following: 1. Inflammatory affections of the respiratory apparatus. 2. Measles. 3. Mumps. 4. Ague and Fever. 5. Diarrhœa.

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1. Inflammations of the lungs and their appendages, so predominant in the winter, continued to occur, but with mitigated violence, during spring. As the hot weather advanced, we observed the winter coughs of aged persons to subside. On the symptoms and treatment of these maladies, we have spoken so fully, in our last number, that we shall dismiss them with these remarks.

2. Measles. This malady prevailed, generally, throughout the late vernal season; but, although cases of it were met with in every part of the city, it by no means affected all who were liable to experience it. This, doubtless, arose from the qualities of the morbillous matter, whether it might have been diffused through the general atmosphere, or secreted by the bodies of the sick; and, to the same cause we may refer the great mildness of the disease, in almost all who were infected. We heard of no death from this malady throughout the whole season; and, in most cases, it required no professional aid. One of our patients, a woman, nearly 40 years of age, declared that she had suffered the same disease *twice* before. This third attack was of such violence, as to render medical assistance desirable, if not absolutely necessary. That it was measles, appeared, not only from the symptoms, but from the fact, that her three children were infected by her.

3. Mumps. This malady prevailed at the same time with the last; which it resembled, in being extremely mild, and in sparing a great number whom it might have attacked. It generally ran its course, without exciting a call for medical advice. We saw no cases attended with the metastases, which sometimes render it so formidable. In our practice, it offered but a single fact deserving of record. It was this. A little girl of strumous habit, with a well marked scrophulous ulcer beneath the under jaw, laterally, had the disease, in a positive, and rather violent degree, in both parotideæ:—affording an example of the simultaneous presence in the system, and almost in the same parts, of two distinct morbid actions.

[TO BE CONTINUED.]

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THE

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JULY, 1828.

ESSAYS AND CASES.

ART. I.—*History of a case of* ISCHURIA, *successfully treated by the cold affusion. By* DR. LEWIS CAMPBELL, *of Moulton, Alabama.*

On Sunday, the 29th of May, 1827, I was called to H. M. W—, Esq., aged thirty four. He informed me, that he was taken, on the preceding Wednesday, with dysenteric symptoms. Being from home on business, he continued to ride a short distance, every day, till Saturday, when he was confined. In the morning before I saw him, however, he had rode 15 miles in a gig. When I arrived, he complained of intense pain in the region of the rectum and bladder, with continued and distressing tenesmus, and an entire suppression of urine, which had existed for forty eight hours. His skin was dry and warm, pulse frequent and tense, stools scanty and whey coloured, covered with a black flaky matter, stomach irritable.

He was placed in a tub of tepid water and had a vein opened, which bled freely; but although kept in the bath for some time, no effect was produced on the strangury. I proposed the use of the catheter; at the same time expressing my reluctance to attempt its introduction, as it would be necessarily attended with pain, and, perhaps, considerable difficulty, from the inflamed and irritable state of the parts.

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To this operation, Mr. W. was reluctant to submit, while there was a hope of relief from any other means. He was again immersed in tepid water, and remained some time, but without effect.

In this trying situation I reflected, that cold, applied to the skin, has a tendency to produce a flow of urine. But a cold bath, in a case of inflammatory dysentery, would, as far as I knew, be an unprecedented practice. I did not, however, apprehend any danger from a current of cold water to the pubic region, whilst he was placed in tepid water to the nates. I accordingly took a half gallon pitcher of cold spring water, and poured it, in a continued stream, on the region of the bladder and pubis, while he sat in the tepid bath. Before I had emptied the third pitcher, the urine broke forth, in a full and free stream, greatly to my satisfaction, and to the inexpressible relief of the patient.

I then directed 3j. of Balsam Copavi and 10 grains of Pulv. Doveri, with a dose of Calomel, to be taken in the course of the evening.

30th, at 8 o'clok, A. M. I found that the patient had neglected to take the Calomel, and had spent a restless night. His calls to the stool were frequent and painful. The dejections had the same appearance as yesterday. He complained of pain in the course of the urethra; had had no evacuation of urine. Gave the dose of calomel; and the same expedient which succeeded so well last evening, was resorted to with equal success. The stream of cold water had not been applied thirty seconds, when the urine burst forth; the bladder emptying itself completely. At 7 o'clock, P. M., the calomel had operated freely. The stools were dark and consistent, with great pain, and a total loss of the power of the sphincter ani, the contents of the bowels passing off involuntarily. Laudanum and Dover's powder were both taken during the night.

31st, 8 oclock, A. M. Dejections were copious and dark coloured, pulse frequent. Six grains of calomel and thirty drops of laudanum were ordered. The stools improved in their appearance during the day. At 6 o'clock, P. M., Grip-

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ing and tenesmus, with distressing pain in the region of the bladder; had not made water; pulse excited; skin dry. Drew twenty four ounces of blood, and used the water as before, with the same success.

June 1st, 6 o'clock, A. M. Directed 5 grains calomel and 15 grains pulv. Doveri. Eased the tenesmus, and occasioned a perspirable state of the surface. The alvine evacuations frequent and consistent; of a lighter colour than formerly; urine evacuated by the application of the water as before. At 3 o'clock, P. M., being called to the country for the night, I directed twenty grains pulv. Doveri, and a drachm of bals. Copaiva to be taken in the course of the night. This quantity of balsam had indeed been given every evening.

June 2d, 10 o'clock, A. M. Had not urinated since the morning of the preceding day. Extreme pain in the rectum and bladder. Omitted the powders last night. Gave the Dover's powder with five grains of calomel. Evacuation of urine effected as formerly, but with more difficulty and a longer continuance in the bath. Bowels were freely opened by an enema of warm water. From this time his convalescence was speedy and uninterrupted.

Moulton, Alabama, May 19, 1828.

ART. II. *A case of* POISONING *by* OPIUM, *treated with success by the affusion of Cold Water. By* DR. JOHN F. BROWN, *of Jackson, Tennessee.*

On the 30th June, 1825, early in the morning, I was called to see Mr. Harris. On my arrival, I found him lying on his back, apparently in a profound sleep; and was informed, that every exertion had been made to awaken him, but ineffectually. There was no suspicion of his having attempted to destroy himself; and no knowledge of his having taken opium. After examining him for some time, I was confident he was under the influence of some powerful narcotic. His pulse was about 45 in a minute; skin cool and flaccid, slightly moist.

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with clammy sweat; breathing slow and laborious; pupils of the eyes dilated; and his jaws strongly set. I had them opened, and on inspecting the mouth, found some small pieces of opium sticking to his jaw teeth. This confirmed our first impression; and, accordingly, with as much haste as possible, I endeavoured to excite vomiting, and arouse him from his profound lethargy. But all attempts were ineffectual. Fifteen grains of tartar emetic were forced into his stomach, and repeated in 10 or 15 minutes, the fauces being titillated with a feather; but without the least possible effect. The sulphate of zinc was also administered freely, but to no better purpose.

His situation still growing more alarming, I requested the attendance of Doctors Young and Snider. On their arrival, the case was believed to be hopeless, as every exertion to arouse the system had proved ineffectual. It was immediately determined to use the cold affusion, in imitation of Doctors Jackson and Cross. We, accordingly, had him placed on the floor, and poured a large vessel of cold water on him, commencing with his face and directing it to his breast. The first vessel was expended without producing any sensible effect. We resorted, without delay, to a second, which appeared to produce some effect, for he began to struggle. So soon as we began pouring the third, he suddenly raised himself on his nates and said, "I cannot stand every thing." We continued the cold affusion, at the same time endeavouring to excite vomiting by titillating the fauces, which was effected so soon as sensation was awakened. As soon as practicable, we directed strong coffee to be taken freely. In about two hours the emetic medicines produced a free catharsis. We directed frictions and moderate exercise, with some other gentle remedies, intended to obviate the effects of the opium, and left him.

I did not visit my patient until late in the evening, when, to my astonishment, I found him cheerful, and apparently free from the effects of the opium. All the secretions appeared to be completely reestablished. I directed him to keep his bowels open with salts or oil. He continued to mend,

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and was free from all symptoms of the poisoning in a few days.

From the statement of the patient, after his recovery, it must have been 14 hours from the time he swallowed the opium, until I saw him. He said he had swallowed a large piece at bed time, the night before. The first dose made him vomit; and, thinking he had thrown up the principal part, he repeated the portion. From the description of this piece, it must have weighed two drams, both together making half an ounce. Whether he threw up the whole of the first dose, is not known.

This case would seem to be of considerable importance, when we take into consideration the period which elapsed from the time of taking the opium, until medical aid could be had,—and his very quick recovery, without the train of disagreeable symptoms, which are not unusual, when large quantities of opium have been taken.

Jackson, Tennessee, May 27, 1828.

ART. III.—*An account of the beneficial effects of* ERGOT, *in a case of Hydatids of the Uterus. By* DR. P. B. JOHNSON, *of M'Connelsville, Ohio.*

In the first number of the American Journal of the Medical Sciences, there is an account of the use of ergot in a case of hydatids of the Uterus; communicated in a letter from Dr. J. W. Anderson to Dr. Dewees. By this letter it appears, that this is the first case of that disease, wherein the ergot is known to have been used. The following is a short statement of a case that happened in my own practice.

Mrs. W., aged twenty four years, of good constitution, was taken, about the 1st of September, 1825, with pain in her abdomen, attended with a discharge from the vagina, of a light coloured fluid, loss of appetite, some fever, and occasional nausea. For four months she had supposed herself pregnant, and was at this time nearly as large as a woman

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who had gone her full time. The physician who attended, believed her to be dropsical, and had prescribed accordingly. On the 15th of September, I was requested to visit her.—When I arrived, I found her extremely exhausted, with a pulse scarcely perceptible, and a copious flooding, which still continued. Upon examination, *per vaginam*, I discovered in the mouth of the uterus, something which I supposed to be clotted blood; but upon removing my hand, I found, sticking to the ends of my fingers, a number of small vesicles filled with a transparent lymph, which convinced me that her disease was hydatids of the uterus; and, inasmuch as the os uteri was not sufficiently dilated to permit me to introduce my hand, and her pains were but slight, I determined to try the effects of ergot, although I had never heard of its use in this disease. I gave her between 15 and 20 grains, and in 20 minutes her pains became regular and strong; the flooding abated *considerably*, and in a short time, she discharged, in detached pieces, nearly a gallon of hydatids, varying from the size of a mustard seed to that of a cherry. Her recovery was slow; and in January following, she was taken with a violent menorrhagia, which proved very obstinate; but at length, she regained her usual health, and has since been delivered of a perfect child. The above is the only case of hydatids of the uterus that I have seen; and I feel confident, that if the ergot had not been used, it would have proved fatal.

M'Connelsville, Ohio, July, 1828.

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ART. IV.—*Essai sur les Proprietes Medicales des Plantes, comparees avec leurs formes exterieures et leur classification naturelle: par* M. AUG. PYR. DE CANDOLLE, *Professeur de Botanique aux Facultes de Medicine et des Sciences de l'Academie de Montpellier, Professeur-honoraire a l'Academie de Geneve, Correspondant de l'Institut, des Academies Royales de Sciences de Munich, Turin, etc. Seconde edition, revue et augmentee. A Paris,* 1816, *pp.* 397, 8*vo.*

An Essay upon the Medical properties of Plants, compared with their exterior forms and their natural classification. By A. P. DE CANDOLLE, &c.

About half a century ago, when the "American Philosophical Society, held at Philadelphia," was almost the only association of philosophers in the new world, its leading members were greatly devoted to practical Astronomy. The objects on which they occupied themselves, were not less within the observation of the astronomers of Europe than of the U. States, while the former were far better supplied with instruments than the latter; and, consequently, were able to make exacter contributions to science. At the same time America was undescribed—her natural history unwritten. Her geological structure had not been exposed to view; her mineral treasures, like the precious metals of the miser, lay buried in the earth, and the countless variety of plants which shot from its surface, in unrivalled beauty and luxuriance, were by them left to bloom unheeded in the wilderness. Such was the misapplication of American intellect. Better conceptions at length arose; and it was seen, that while the Heavens could present nothing new to *our* philosophers, the Earth where they lived was prolific of novelties, and might be made to yield an opulent harvest. *It*, then, became an object of study; and the very city which was the cradle of American

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Astronomy, has since become still more distinguished for its successful cultivation of Natural History and Medicine.

Since the era of which we have spoken, the West has been explored and settled. Men have encamped beneath its overshadowing forests, which have been thinned out by the axe of industry; its beautiful shrubs have been eradicated; its tribes of flowering and medicinal herbs trodden under foot, and in part made to disappear, like the wild animals which fed upon them. Population has thickened—organized society has begun to appear—the germs of useful knowledge have been planted. Medicine, the inseparable attendant on civilization, has been introduced, and its cultivators are to be found in every inhabited spot. They are surrounded by the peculiar plants which flourish in the bosom of a newly discovered continent; and, still, most of them are as inattentive to the science of Botany, as the earlier philosophers of America were to its natural history at large. Our present object is to point out this omission, and to recommend the cultivation of Botany, to our medical friends of the West.

Physicians ought to recollect (and they might be permitted to recollect it with pride) that the very name of their profession, is almost a synonym for nature; and that this title was appropriated to them, under a clear perception of the objects which should engage their attention. They are not called upon, however, to study all nature; this would be a fatal diffuseness. They must concentrate themselves upon a spot, but this, on the other hand, should not be too small; for the examination of a part can never make us acquainted with the whole. The proper study of the profession is organized nature, and this comprehends the vegetable as well as the animal kingdom. Between these two departments there is more intrinsic similarity than many persons suppose. The former, it is true, is far more complicated than the latter; but still the differences between them are to be found in their organs, rather than their constitutions. They are both highly vascular, and circulate fluids which undergo a great variety of transformations, affording many results which are

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almost identical in the two classes. Their growth is apparently on the same principle; and they, alike, become old and perish. Finally, plants have their diseases, which greatly resemble those, which, in animals, we denominate organic. Thus the principle of physical animation and that of vegetation, seem to be mere varieties of the same power; and he who would comprehend its nature, should trace it throughout all its operations.

We might rest the question upon this reference to general physiology; but an equally conclusive argument in favour of Botany, may be raised by referring to therapeutick medicine. A large proportion of our most important medicines, belong to the vegetable kingdom; and although a physician may prescribe them, successfully, without an acquaintance with Botany, it is undeniable, that had not the vegetable kingdom been studied, scientifically, our Materia Medica would at this time, be far from that perfection which it boasts. Many of the greatest botanists have been physicians—of which we may cite Linnæus, Boerhaave, Withering, Darwin, and Barton. If the study of Botany has been necessary to the advancement of practical medicine in past times, it will be equally so in future; and, if it recommend itself to the profession generally, it still more forcibly recommends itself to the profession in the United States; and, especially, in the West and South. It is lamentable to observe the mistakes which have found their way into certain fashionable works on the Materia Medica; compiled or reprinted in this country, by gentlemen learned in every science, but that on which they undertook to write. In these reprints and compilations, it is perfectly easy, to place the finger of criticism on every botanical interpolation; for it bears the stamp of error or imperfection. Such productions add but little to the stock of professional knowledge; and still less to our national character. We have heard it said, however, that physicians have not time for the cultivation of any branch of natural history. This is not the fact. They fail, not from want of time, but from want of application; and this brings us to say, that the physicians of this country, both before and after graduation,

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are in general deficient in application, to every thing, but the practical duties of the profession. It is undeniable that the majority of them enter upon those duties with a *minimum* of elementary knowledge, (excluding the rudiments of natural philosophy, mineralogy, zoology, botany, and, even, meteorology) and too often read little else, than the public journals, and an occasional compilation on practical medicine, ever afterwards. This is the great American failing. To this idleness (seeing that in books of science things should be called by their right names) we may fairly ascribe the imperfection of most of our contributions to medical science, when compared with those of our European brethren, whom experience has taught to rely, not on the pretended inspiration of genius, nor even the multiplicity of opportunities, so much as unabated diligence. This in fact is the *sine qua non* to distinction, in the medical profession; and, indeed, in every other. The proper time for a physician to cultivate Botany, and other branches of natural science, auxiliary to medicine, is the first few years after his graduation. He ought, indeed, to acquire the first idea of those sciences during his novitiate. Our colleges, however, in their wisdom have seen fit to dispense with all such attainments, with the exception of Chemistry (which is often studied most superficially) and few students are disposed to acquire more than the laws of the college prescribe, as indispensable. No young physician has, nor ought to have, much professional occupation. Every case should be a study for him; and he cannot, therefore, attend to as many in the same time, as the man of age and experience. Hence the correctness, on the part of society, of a slow extension of its confidence and patronage. During this period of probation, he has ample time for the cultivation of Botany, and indeed of the other sciences which lend a helping hand to Medicine; and to it we would earnestly direct the attention of the younger members of the profession in these western states. The fixed habits of our elder brethren cannot of course be altered.

The advantages which result to the individual from the study of Botany, are not limited to its connexion with medica

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science. Few studies contribute so much to strengthen the faculties of observation and comparison, as that of Botany. It is a science of visible relations; and every practical botanist, must of necessity, become a good observer. The habit of nice discrimination thus acquired, is to a physician invaluable. Without it, the most comprehensive views in the philosophy of medicine, and the greatest erudition, will not preserve him from perpetual mistakes at the bed side of the sick; where, beyond every other situation, the consequences of error are most fatal.

But we must come to the work before us. Its object is clearly set forth in the title page: and will be, generally, acknowledged to be of substantial interest to the profession. We know of no book in our language of the same kind; and have, therefore, although it is not a very recent production, thought it worthy of being introduced to the notice of our readers.

The fundamental propositions of M. De Candolle's Essay are not new, but he has the merit of having illustrated them by a greater number of facts than any other person; and for this task, his manner of regarding and prosecuting the science of Botany had peculiarly fitted him.

In the Linnæan system, plants are distributed into classes, orders, and genera, by a reference to their fructification only; but it is well known, that many of the classes and orders of this method are artificial. A natural classification brings together such plants as resemble each other in all their parts. Such a method was long since attempted; and although attended with great difficulties, has been brought to higher perfection, than could, at first, have been anticipated. Among the distinguished labourers in this department, is M. De Candolle. He is, indeed, the author of one of the latest systems of natural classification, which is that adopted in the Essay now under review. By this system nearly all known plants are divided into 150 groups, or orders; each of which is subdivisible into genera or families. Now, the essential proposition of the work which we are about to present to the notice of our readers, is, that plants which resemble each other

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in their external or botanical characters, also, resemble each other in their chemical composition and in their action upon the living body. From whence we derive the corollary, that the medical properties of one species of a natural group being given, the qualities of all the rest may be inferred, at least with considerable probability.

In the first part of his Essay, M. De Candolle undertakes to develope the general proofs of the analogy which exists between the forms and the properties of plants, and the rules by which the comparison should be conducted. The first chapter is divided into several sections; the first of which embraces the proofs deduced from theory; in which our author insists, that from principle we should expect to find the virtues of plants analogous to each other, when their botanical characters are analogous. The second section sets forth some of the proofs which are furnished by observation. If the different species of a natural family of plants possess a similar composition, and have similar properties, we might expect brute animals and insects, which have an instinctive fondness for a particular species, to extend their depredations to all others possessing analagous characters, provided they possess analogous constitutions, but not otherwise. Now observation informs us, that, in general, an animal which is prone to subsist on any particular species, will in the absence of that species, select others which are related to it in botanical characters; a fact which conclusively indicates a similarity in composition and qualities. Thus,

"The ox leaves untouched the whole of the labiated plants, and all the veronicas; and the horse refuses nearly all the cruciferous vegetables. Both these animals, the sheep, the hog, and the goat, scarcely eat any of the solanaceous plants, while they devour, with avidity, the grasses, the leguminous vegetables, and those with compound flowers. Animals naturally limited to a single kind of nourishment, sometimes extend their ravages to all the species of the same family. The insects might furnish a thousand examples of this kind. Thus the *Curculio Scrophularia* of Linnæus, the *Cynips Rosæ*, the *Psylla Juncorum*, the *Curculio Rumicis*, the *Cynips Salicis*, &c. attack many species of the genera, which bear these names, and some of them subsist indifferently upon all. For example, the

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silk worm is nourished, in different countries, with the leaves of the white, black, red, Indian, and Tartarian mulberry." pp. 21, 22.

In the third section we have a brief statement of the proofs drawn from experiment; which the author justly regards as more conclusive, than those furnished either by reasoning or observation. The following paragraph will set forth his views on this subject.

"If," says he, "we inquire into the history of the Materia Medica, we find that a great number of medicines, even the most active, which in the infancy of the science, were respectively regarded as the product of a single plant only, have been since found in many kindred species. Thus the cinchona bark is derived from all the true species of that genus; rhubarb from nearly every species of *rheum*, opium from many different kinds of poppy, semen-contra (a worm powder) from a number of species of artemisia, and turpentine from the greater number of species of pines. Further, the best accounts inform us, that tragacanth is afforded by many spinous *astragali*, as gum arabic flows from many acacias; the roots of a kind of violet, growing in different places, are found to be emetic, and, I think I have rendered it probable, in a Memoir, that the anthelmintic property of the Fucus Helminticorton is common to a number of the Ceramiums. Many species of the same genus, afford medicines so similar, that before knowing their history we had united them under one name.

"There are others which, being better known to us because they are indigenous to France, have always been regarded as endowed with the same virtues; thus all the mallows are emollient, the scurvy grasses are antiscorbutic, the gentians febrifuge, the monkhoods and the hellebores, caustic and dangerous, the euphorbiæ acrid and purgative," &c.—p. 28.

We might extend our quotations; but, the knowledge of every reader, will supply him with similar facts. It will, also, present him with many apparent exceptions to the rule; exceptions which our author recognizes, and proceeds to consider and explain away.

To accomplish this, he investigates, and attempts to settle the rules of comparison, between the properties and the external forms of plants; and this makes the subject of the second chapter. The first section treats of classification. Many naturalists speak of organized beings as constituting a chain. Our author objects to this manner of considering them. In the first place, "Nature,' says he, 'does not conform

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to our books. Each being is placed among a certain number of other beings, with which it has more or less affinity; and the best means we possess of communicating an idea of this relation, is to represent all natural objects, not in a series, but as placed on a geographical chart. The species correspond to the towns, the genera to provinces, the orders to empires, the classes to continents, and insulated species to islands. If such a chart were completely executed, and laid before us, the first thing that would strike us, as in a true geographical map, would be, that in certain empires or certain provinces, the towns would lie very near each other, while in others they would be widely separated. This separation would indicate one of two things; either that there were intermediate species yet unknown, or that nature, in the order of being, had really left vacant spaces, here and there, as, upon the surface of the earth, she has created unihabitable morasses and deserts. Here we have then a first cause of uncertainty—in the unequal distances from each other, of the species in the different genera or the different natural families. We ought, therefore, no more to be astonished, that the grasses, the mallows, and the labiate and cruciform plants, very closely resemble each other in properties, while the *caprifolaceæ*, the *rutaceæ*, the *urticæ*, and some other families, present anomalies, than we should be surprized, in the social order, to see a very populous and highly civilized country, exhibit uniformity of manners, while regions almost uninhabited, or divided by rivers or mountains, offer striking differences in the character of their people.

"Secondly. As in political arrangements we sometimes unite a detached city or a small island with the nearest province; so in the order of nature to avoid a multiplicity of divisions, the botanists attach to a genus or an order, a species which differs from the rest in its organization. In these cases if the properties differ, it is because the organization is different, and the exception confirms the rule.

"Thirdly. It frequently happens, that some plant which varies widely in its properties from the family or the order in which it has been placed in our systems is, subsequently, found, in reality, to appertain to some other."—pp. 33—36.

Passing by the examples with which our author illustrates this proposition, we come in the second section, to a comparison with the organs of plants. The section opens with a distinction between the general and the particular properties of plants. The former result from a mixture of the whole of the latter, which only, deserve consideration, in this inquiry.

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"It is evident,' says he, 'that we ought to compare each organ of a plant with the corresponding organs in other plants, and, in this comparison, the more we descend into detail, the nearer we approach to exactness. Thus how many plants do we not see, which possess very different properties in their different parts! M. Jussieu has offered us a fine example of the utility of this exactness, in showing us, that in the seeds of the Euphorphiæ the integuments are sweet and healthy, while the inner parts are acrid and strongly purgative.—Guided by this principle, we shall not make the mistake of comparing the potatoe with the berries of the other species of Solanum, nor the roots of the carrot with the leaves of the hemlock. Thus we have already weakened one of the strongest objections against the analogy for which we have insisted; and it will be still further reduced if we follow out the consequences of this comparison of the organs.

"First. It is evident that if some plants of a family enjoy a particular organ, which is either wanting, or very little developed, in the other plants of the order to which it belongs, we ought not to be astonished if the properties of this organ are not found in those plants. Thus if the pulp of the Vanilla enjoys aromatic properties which are not found in the family of the Orchideæ generally, do we not perceive the cause, by observing, that the pulp which envelopes the seeds, is entirely wanting in the other genera of the order? Is not the same pulp, soft and laxative in the the cassia and tamarind, wanting in the greater part of the leguminous plants? Examining this subject more closely, we find certain organs, which, if we may be allowed the expression, are accidental; and which have the same properties, whenever or in whatever family, they may be developed. Thus the tubers which are attached to certain fibrous roots, and which should be carefully distinguished from a simple swelling of the body of the root, contain a mild and nourishing fecula, as we see in the potatoe, Jerusalem artichoke, sweet potatoe, drop wort, &c. &c.

"Secondly. If, on the contrary, the useful properties appertain to some organ, essential to the family, we find that these properties offer but little variation. Thus the farinaceous perisperme of the grasses, is highly nutritive and of an agreeable taste. The seeds of the umbelliferous plants, all of which have small vessels filled with essential oil, are, the whole of them, stimulating and aromatic &c.

"Thirdly. If the same properties appear to be found in similar plants, but in different organs, we may, it seems, to me, find the cause of this anomaly, in studying with greater care the relations of these organs. This subject, which belongs to vegetable anatomy, requires developments of considerable length, and a degree of knowledge which perhaps the botanists have not yet acquired; I will, therefore, content myself with citing such examples as will enable us to perceive its utility. When we examine the series of monocotyledonous plants, we are surprized to see the bulbs of the liliaceæ fur-

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nish fecula, almost like the stems of the palms; while other bulbous roots, have a cathartic property, analogous to that afforded by the juice of the stem and leaves of the aloe. This resemblance between the stems and bulbs, which may appear an exception to the rule which I have attempted to establish, is, on the contrary, in my opinion, a confirmation; for vegetable anatomy proves, it appears to me, that the bulb ought not to be assimilated to the roots but to the stems: I will explain myself."—pp. 37—40,

Our author here proceeds to give his reasons for this opinion, which are ingenious if not conclusive: but as the subject is purely botanical, we shall pass over, and proceed to the next section, in which he enquires into the influence which soil, climate, and other causes, exert, in modifying the properties of the different species of a family. The following extract will show his manner of considering this subject:

"M. Theodore de Saussure has shown us, that this influence (that of the soil) extends much further than we had thought, by having remarked, that the same plants growing in granite or in calcareous soils, offer remarkable differences in their chemical composition, and in their nutritive properties. The attention of physiologists has been excited upon this subject too short a time, to enable us to draw from it many direct consequences; but we know more of the influence of the soil in other respects: thus in certain families we see the properties of the same plant vary a great deal, according as it has grown in a dry or a humid situation; the *Heracleum Sphondylium*, a common plant in our meadows, and which different domestic animals eat without inconvenience, becomes sometimes poisonous, when it grows in a very wet place, or when the year is too abundant in rain. We see in the same manner, that the celery which is collected in marshes, where it grows naturally, is acrid, nauseous, and poisonous, while it becomes sweet and proper for nourishment when it is cultivated in a dry soil. If the same species of umbelliferous plants offer such anomalies, ought we to be surprized at seeing the other plants of that family acquire, in general, a property more or less poisonous, when they grow in wet places, as we see in the *Phellandrium Aquaticum*, *Cicuta Virosa*, *Œthusa Cynapium*, *Œnaothe Crocata*, &c., while, on the contrary, those which grow in dry places, exposed to the sun, are more or less mild, aromatic, and stimulating: such are—*Angelica Archangelica*, *Coriandrum Sativum*, *Anethum Fœniculum*, &c. According to the same observation, ought we to be astonished, that all the poisonous umbelliferæ are natives of cold or temperate countries, while those which grow in warm countries are aromatic and usefully employed as stimulants"—pp. 43, 44.

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In like manner our author states the influence of elevation, of light, of the season of the year, and of the age of plants, upon their properties; the whole of which, we should be pleased to transcribe, but our limits do not permit.

The fourth section is chemical. In the first place, the diversities, in quality, which similar plants present, from a mere variation in proportion, of their ingredients, may be very great. Thus, for example, analogous plants may abound in the gum-resins, but the relative qualities of these principles may be constantly varying; and in the roots, which contain fecula mixed with an acrid juice, such as those of the genus Arum, the latter may exist, sometimes, but in very minute quantities, or even be entirely wanting. In the second place, among the immediate materials of vegetables, there are some which exist successively, in several different states. Thus mucus changes to sugar, and this again seems to furnish the elements of fecula, the fixed oils are transformed into wax, and the volatile, into resin, &c. So that if the two species were compared in different stages of this transformation, they might present great apparent differences, when in reality they possessed great similarity. In the third place, when we see very different plants apparently affording the same principles, which is contrary to the theory, we shall often find, upon closer inquiry, that the resemblance, in properties, is not, in reality, so great as we at first supposed.

"Thus, although the bitter taste denotes, in general, analogous qualities, in the plants which are endowed with it, still this is not rigorously true, except when it relates to vegetables of the same family. The bitter and deleterious principle of the Strichneæ; the bitter and poisonous principle of the Menisperma; the bitter and salubrious principle of the Gentianæ; the bitter and animalized principle of the Armoises; the bitter and resinous principle of the Magnoliaceæ; the bitter principle, so eminently soluble in water, of the Simaroubeæ; the bitter principle of the Angusturæ, which gives with iron a yellow colour; that of the Chamadrys, which precipitates iron of a green colour; finally, that of the Quinquina, which precipitates the nut gall, and dissolves equally, in water and alcohol;—all these different bitters, I say, are different substances, and cannot be, rigorously, compared with each other. We arrive at the same result, if we compare, in the same manner, the astringents, owing

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either to the gallic acid, found in the Ratanhia, the tannin existing in the Acacias, or the union of these two ingredients, as they exist in different plants, &c.

"These important considerations furnish us with an answer to one of the strongest objections, that made by M. Halle, to the analogy between forms and properties, viz. that the same properties are found in very different families. This assertion may be strictly true, when made of determined properties, and relative to chemical materials, perfectly pure and identical in all vegetables; thus the slight modifications which we observe in the feculas, fixed oils, gums, ligneous matters, &c., are of little importance; but when the assertion is made of principles less uniform in their composition, and not so generally spread in the vegetable kingdom, the distinction of families will be found to display all its importance; thus we know, that the bitters and astringents, in the same family, are *only* similar to each other; all physicians know very well, that the action of narcotics, obtained from different families, is far from being the same; thus we find a narcotic principle in the *Papaveraceæ*, the *Chickoraceæ*, the *Borraginea*, the *Drupaceæ*, *the Solanaceæ*, the *Nymphæaceæ*, &c.; but they are different from each other, and are no more to be confounded in the practice of medicine, than in the classification of the botanists; the application of the theory of natural relations to the Materia Medica, may even be useful, in many cases, as a means of classing with greatet exactness, the varieties which present themselves in the same series of medicines: thus, not to depart from the example already cited, it seems to me, that a classification of narcotics, founded upon the natural families of plants, would be at least as exact, as those which are found in most treatises on the Materia Medica."—pp. 49—51.

The fifth section treats of the influence of pharmaceutic manipulations, in modifying the active properties of the ingredients of plants; and points out the necessity of making those processes exactly uniform, when we propose to use their results in estimating the relation, between natural affinities and medicinal qualities.

The sixth, discusses the modifying agency of the mechanical and some accidental properties of plants, on our estimate of their essential medical virtues. Of this section we shall translate a single paragraph, which contains a suggestion that will perhaps be new to most of our readers, and may serve as a specimen of the author's views.

"Thus when the dog, urged on by instinct, eats the dog's grass (Chiendent) to cause vomiting, we ought not to count that herb

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among the emetics, since to all appearance, it only produces this effect upon the dog, because that animal, furnished but with cutting teeth, cannot grind it; and in swallowing it half masticated, experiences an irritation in the œsophagus, which excites vomiting, as it is occasioned in man, by tickling the fauces."—p. 54, 55.

In the last section, our author speaks of the errors which the profession have committed, in their therapeutick observations; and attempts to show that great inaccuracies may creep into our remarks on the modus operandi of medicines; in consequence of which we may be led to disbelieve in fixed relations, between botanical affinities and medical properties, when they really do exist. The great causes of error are two:

"1. We often designate under two different names, and range in different classes, medicines, the action of which upon the animal fibre, is really similar; and this error depends on two causes; first, applying two different medicines to different organs, and then comparing their effects, instead of applying them to the same organ; secondly, comparing their effects when administered in very different portions—one being given in a large and the other in a small quantity—variations in the dose which must afford striking differences of effect.

"2. Having considered how, either by diversity in diseases, or in the doses of medicine, the effects of those which are really analogous in virtues, may be very different, it remains to examine the last source of error which I shall notice. It is this, that substances really different, sometimes produce similar effects. There is scarcely any class of medicines, in which we cannot find examples of this phenomenon. Thus although the increased flow of urine from diuretics, seems to be a very simple effect, it is, nevertheless, produced in three different modes;—by the mere augmentation of the mass of liquids in the body; by a special stimulation of the kidneys; or by increased excitement of the whole system. The succulent fruits, the digitalis and the squill, appear to me to offer examples of these three classes of diuretics."—p. 61, 62.

This example, although in some respects exceptionable, may serve to explain our author's meaning; and, desiring to close our account of this part of his book, we shall conclude with the following extract:

"Here terminates the first part of this work. We have traced out the principal rules which the present state of Botany, Chemistry,

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and Medicine can present, to govern us in comparing the properties of plants with their natural classification; and each of them, instead of augmenting the number of exceptions, has furnished, on the contrary, a solution of many anomalies; a circumstance which, if I do not deceive myself, goes far towards establishing the truth of the theory."—p. 63.

Having delivered what may be called the theory of his subject, our author comes, in the second part, to the practice. This is by far the largest portion of his book. He regards all plants as divisible into a number of natural groups or orders, which, in another work, he has arranged in a series of his own. Each of these groups he now takes up, separately; and examines, whether its properties are equally uniform, with its botanical characters. This is obviously an undertaking of great magnitude; and requires, for its perfect execution, a far more intimate knowledge of the botanical relations, chemical composition, and therapeutic qualities of plants, than we have yet attained. Hence, in travelling through the series, we perpetually meet with natural families, the virtues of which are so imperfectly known, that they can only be indicated, as proper objects of future inquiry. In others, the properties of the species correspond beautifully with the natural characters, and hold out to the cultivators of this interesting branch of science, a prospect of ultimate success, that should animate them to continued exertion.

Of this part of our author's work, we shall translate and present to our readers, an account of as many natural orders as our limits will permit, selecting those which will be intrinsically interesting to the profession, rather than such as are best calculated to demonstrate the reality of the connexion between botanical affinities and medical properties.

"3.—MAGNOLIACEÆ.

"Although the family of *Magnoliaceæ* is composed of a small number of species, it merits the attention of physicians, by the intensity of their sensible qualities.

"The bark of all the species, possesses a bitter taste, without astringency, combined with a pungent and aromatic quality. The last property is, especially, remarkable, in the different species of the ge-

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nus Drymis, which indeed, suggested the name;* such as the *Drymis Winteri*, celebrated under the name of *Winter's Bark*, but which must not be confounded with the *Winterana Canella*, which belongs to the family of Meliæ of Jussieu; the *D. Granatensis* of Santa Fe, the *D. magnoliæfolia*, named *Canelo* in Chili, and two other species, imperfectly known, indigenous to Mexico and Brazil: The barks of all these species are slightly bitter, very sharp, pungent, and aromatic; and are employed with success as stimulating tonics, and stomachics, in dyspepsia and in certain fevers. The same physical qualities and medicinal properties are found in the bark of the *Melambo*, lately introduced into European practice, and which appears to me, evidently to come from a Drymis or some kindred genus. This bark contains neither tannin nor gallic acid, but a volatile, aromatic principle, and a great quantity (nearly one fourth of its weight) of a bitter and resinous matter. The aroma of the bark of the Drymis is found, although less intense, in the bark of the Illicium, in that of the *Magnolia glauca*, *grandiflora*, and *auriculata*, finally, though feebler still, in that of the *Liriodendron tulipifera*. In the two latter genera, the bitter principle predominates; and they are generally employed in America as tonics and febrifuges. Several of them, as the *M. glauca*, and, especially, the *L. Tulipifera*, (yellow poplar) are used in the United States of America, as substitutes for the Peruvian bark.

"The analysis of the bark of the yellow poplar, published by M. Tromsdorf, demonstrates, as in the case of the Melambo, a total absence of tannin and gallic acid, with the presence of a considerable quantity (one eighth of its weight) of bitter principle, which is said to be, not resinous, but of the nature of extractive.

"The aromatic principle of the Magnoliaceæ is found in many of their fruits; especially in the pericarps (seed cases) of the *Illicium*s, where it is very remarkable. These shrubs are known, under the name of Badian or star-Anis. The species which grows in China, (*I.* anisatum) bears stellated fruit, the odour of which is sweet, pungent, and aromatic, and its taste a little tart. The Chinese burn it in their temples; and the Europeans employ it, in rendering certain liquors aromatic, as for example, the Anisette de Bordeaux, from which we may conclude, that the aromatic principle of the stellated Anis has a resinous nature. A tincture of the fruit of the *Magnolia acuminata* is employed with some success in rheumatic diseases. The seed of almost every species of that genus are remarkable for their bitterness. This property is well known in the American species; and the seeds of the *M. precia* or *yulan*, known in China under the name of *Tsin-y*, are there employed as a bitter and febrifuge.

"Finally, the odour of the flowers of many species of this genus, has a decided action upon the nervous system. That of the *M. tripetata* or umbrella tree, causes nausea and headache; and Dr. Barton

* Drymis signifies in Greek, a pungent taste.

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relates that the odour of the flowers of the *M. glauca* is so stimulating that he has seen it increase the paroxysm of a fever, and the pain in an attack of inflammatory gout. I should even cite on this occasion, the sweetness of the perfume afforded in India by the flowers of the Champacs, (*Michela*) in Japan by those of the Yulan (*Magnolia precia*, Corr. *M. Yulan* Desf.) and in Cayenne, by those of the *Magna odorata*, Aubl.—pp. 72—76.

"18.—VIOLACEÆ.

"The active properties of the Violaceæ reside in the roots, all of which appear to be endowed with emetic virtues, in a greater or less degree. Such are, among the species without reversed flowers, which constitute the genus *Pombalia* of Vandelli, or *Ionidium* of Ventenat, the *Viola parviflora*, *V. ipecacuanha*, and *V. itonbou* of Aubl. of which I have spoken in detail in my Memoir on the different kinds of Ipecacuanha;—such are also, among the true Violets, the *V. odorata*, *V. canina*, even the *V. tricolor*, the properties of which, although feeble, cannot be doubted. The last species, is distinguished, likewise, by the utility of its leaves and stems, in cutaneous eruptions, concerning which, however, new experiments are required.—p. 96.

"21.—HESPERIDEÆ.

"At the time of the first edition of this work, the family of Hesperideæ was so badly described in its limits, that it contained plants, heterogeneous in their properties as well as their forms; since that period M. Correa has asssigned the true boundaries of the family; and all the species which compose it are found to offer great uniformity, both in their structure and properties. The whole of these trees have wood of a remarkably compact texture; the bark and the leaves are furnished with a great number of vesicles filled with a volatile oil, aromatic, bitter, and stimulating; which gives to these parts decided tonic and exciting qualities; the rind of the fruit participates in these properties; the pulp is always more or less acid, as we see in the different kinds of Citron and in the *Limonia acidissima*; the same acid is found, though in a less degree, in the Oranges and Siam oranges. This acidity, and a little bitterness, renders these fruits refreshing, and useful in fevers and in scurvy. In the countries where the Hesperideæ are common, they use many different species indiscriminately.—pp. 99, 100.

"34.—CRUCIFEREÆ.

"All who have studied Botany, know how much the Cruciferæ present of uniformity, in their botanical, chemical, and medical characters; and hence it may, perhaps, be regarded as superfluous, to enter into details concerning them.

"The whole of the Cruciferæ, contain a very acrid volatile principle, for a long time supposed to be alkaline, and regarded by many chemists as formed in the plants themselves. It is correct to

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say, that, in their putrefaction, a considerable quantity, is disengaged; and that, by distillation, after fermentation, a certain portion is obtained; but neither their distilled water, nor their recently extracted juice, gives the least indication of alkalescence: we think, then, that ammonia does not exist, already formed, in the Cruciferæ, but that it is developed under certain circumstances, in consequence of the great quantity of azote, which these plants contain. It is probably to this azote, that we should refer the animal odour of the putrefying Cruciferæ; and, even, their great tendency to putrefaction; it is, perhaps, the necessity which they have for this principle, which causes them to grow, naturally, in such great numbers around the habitations of men and of animals.

"The acrid property of these vegetables, depends on a certain quantity of volatile oil; which may be extracted by different chemical processes, which possess the smell and taste of the Cruciferæ, and which is contained in small quantities, either dissolved or mixed, in their distilled water. This principle renders the Cruciferæ eminently stimulating: If it is concentrated, as we see it, for example, in mustard seed, and in the roots of the *Cochleariæ armoracia*, or, sometimes, in the herb itself, as in the *Lepidum latifolium*, then, the juice of these parts, applied upon the skin excites, first, a redness, afterwards an active inflammation, and, in the end, an effusion of serum: this is the remedy known to every body under the name of sinapism.

"If this acrid and stimulating matter be administered, internally, it acts upon the nervous, and afterwards, upon the sanguiferous system, when it excites either diaphoresis, or, more frequently, diuresis. Given in large and repeated doses, it acts as an antiscorbutic; and it is for this purpose, that the Cruciferæ are most frequently and usefully administered. We know that the habitual employment of these vegetables, prevents scurvy, probably by sustaining the tone of the system; and that the same plants often cure scurvy already developed, either by re-establishing the strength or by acting as sudorifics or diuretics.

"When this acrid matter exists in a slight degree, these plants may serve as condiments, of which cresses are an example; when it exists, united with a considerable portion of mucilage or of saccharine matter, the mixture is highly nutritive, as in the cabbage, radish, turnip, &c. But this increase of nutritive matter does not annihilate their antiscorbutic properties, for a slight fermentation, which decomposes the saccharine matter, disengages the acrid principle, and restores these vegetables to the class antiscorbutics, of which the Sour krout is a striking example.

"When the plants of the order Cruciferæ have a taste too intense to be agreeable, we employ different precautions to obtain them more or less bleached, when they become more juicy and insipid: thus we are enabled to employ for food the roots or the lower parts of the stems, of many species, the leaves of which are neglected, such,

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as the radish, turnip, &c. As in the Cruciferæ, which dispose their leaves into heads, as the cabbages, we choose, from preference, the central leaves, bleached and made tender by the absence of light: so we come, by different processes of cultivation, to make the flowers, in whole or in part, abortive, and thus to render the young shoots and the flower stems, a great deal more fleshy, and more mild and aqueous, as we see in the brocoli and cauliflower; sometimes we bleach, artificially, the stems, at the moment they sprout from the earth: it is by this culture that the English have made an agreeable pot-herb, of the sea-kale, so celebrated, formerly, among the Romans, as a coarse food reserved for the nourishment of the poor.

"The seeds of all the Cruciferæ contain a fixed oil, which, in many species, is so abundant, that it may be extracted with advantage, many examples of which we have, in the Colsa, Cameline, Rape, Julian, &c. When the fixed oil is mixed with a sufficient quantity of the pungent volatile oil, the seeds become, as I have already said, acrid, stimulating, diuretic, and sometimes anthelmintic.—pp. 111, 116."

"62.—UMBELLIFERÆ.

"Of all the families of plants, the medicinal characters of which we are rapidly tracing, there is not one which merits more scrupulous attention, than the umbelliferous; whether we refer to their dietetic and therapeutic importance, or to the anomalies which they present. In studying them, it will be necessary to attend with care, to the distinctions that exist among their organs, and even to those which their juices present.

"All the apparent anomalies of the order Umbelliferæ, seem to me to be explicable; by admitting that their extractive matter is narcotic, and their resinous principle, more or less stimulating and aromatic; or, in other words, that the sap, half elaborated, is narcotic, while, on the contrary, it becomes aromatic and stimulating when it is transformed into the true and proper juice. Let us follow the consequences, of this hypothesis, by applying it to each organ, in particular, and to the phenomena, in general, which the plants of this order present.

"Vegetable physiology teaches us, that the moisture of the soil enters the plant through the extremities of its radicles; that it ascends through the body of the roots, and then mounts through the trunk to the branches; where, by an unknown chemistry, it is transformed into the proper juice, and returns to the root along the bark. The root then contains a great quantity of sap, not yet elaborated; and a certain quantity of proper juice, which has redescended through the bark; consequently, according to our hypothesis, the roots of the Umbelliferæ, should contain an aqueous mucilage, more or less insipid; and more or less aromatic, from the presence of the proper juice; they ought not to be dangerous, since they contain little or no extractive, and may, therefore, be edible and nourishing, for man;

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as we find to be the case, with the roots of the carrot, parsnip, angelica, eryngo, &c., &c.; among which we only observe differences, more or less considerable, in the quantity of the aromatic, saccharine principles. The roots even of the poisonous Umbelliferæ, are sometimes salubrious; of which we have a curious example, in the *Ænanthe pimpinelloides*, the tuberous roots of which serve as food at Angers, under the name of *Jouanettes*, and at Saumur, under that of *Mechons*. Many of the Umbelliferæ, present, in their roots, a notable quantity of saccharine matter; thus according to M. Drapier, there is fourteen per cent. in the dried carrot, twelve and a half per cent. in the parsnip, and eight per cent. in the skirret. In the herb, on the contrary, we find a large quantity of extractive, mixed with, or dissolved in the sap; and which we obtain by infusion or decoction, in water. From the bark we may procure, a variable quantity of proper juice, more or less aromatic, or more or less resinous; consequently, in the natural state of things, the extract of the umbelliferous plants, ought to be narcotic, as we find it in the *Conium maculatum*, the *Cicuta virosa*, the *Æthusa cynapium*, &c., while, on the contrary, the proper juice, extracted from the bark, either by an incision, or by pharmaceutic manipulations, should be tonic, stimulating, or aromatic, as we see it in the *Galbanum*, *Opopanax*, *Lovage*, *Assafœtida*, &c. Further, if we employ, at different times, the bark and trunk, that is to say the sap and the proper juice united, the qualities of the mixture must vary, according to the proportions of the two principles.

"Finally, if we use the seeds, as we find in them, not only the sap, (at least when they have come to maturity) but a liberal quantity of volatile oil, lodged in their exterior integument, we ought to regard them as free from poisonous qualities, and endowed with aromatic, stimulating, and tonic powers; and in fact, these properties are common to the seeds of the whole of the Umbelliferæ in all countries.

"Let us approach the subject still closer, and we shall find, that the hypothesis, which I have stated above, explains even the variations which soil, age, and culture, occasion in the properties of the Umbelliferæ. Thus we know, in general, that aquatic plants contain, proportionably, a greater quantity of sap, than of proper juice; more mucilege and extractive, than oil and resin; therefore we should not be surprised, to see the Umbelliferæ more narcotic, when they grow in wet, and more hot and aromatic, when they vegetate in dry places; we may even conceive how those which are bleached, contain a sap scarcely elaborated, and might thus be assimilated to the roots of these plants; while, on the contrary, those which are exposed to a strong light, contain a larger proportion of proper juice.

"According to these considerations, I think that the Umbelliferæ conform to the laws of analogy, as I understand them; that is to say, that each juice and each organ, preserves the same nature and

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the same properties, in each family. I will add, that the organ which furnishes the true botanical character of the family, viz. the seed, is that in which Chemistry and Medicine find the fewest anomalies.—pp. 159—163.

"94.—LABIATÆ.

"The Labiatæ constitute, perhaps, the most natural family to be found in the vegetable kingdom. The resemblance in their forms is such, that no botanist has yet attempted to disunite them; and it is, indeed, difficult to separate them into secondary groups or genera. The properties of these plants offer a resemblance quite as striking.

"All the Labiatæ are remarkable for their cordial, stomachic, and tonic virtues; we may distinguish, in the whole of them, according to the observations of M. de Jussieu, two principles—the one bitter, the other aromatic,—mixed in varying proportions. Their bitterness, which is communicated to hot water, appears to reside in a gum-resinous principle, which is found, more or less abundantly in every species; those in which it *abounds*, as the Scordium (*Teucrium scordium*), the Germander (*T. Chamadris*), &c., are particularly employed as stomachics; and even sometimes, as febrifuges; those, on the contrary, which are abundant in volatile oil, and which are, consequently, more aromatic, are used as heating, and exciting stimulants; the different mixtures of these two principles, and the particular state of each, have led to the designation of a great number of these plants to particular uses, in medicine and dietetics; some serving as condiments for our food—such as Marjoram, Summer Savory, Sweet Basil, &c., the others, furnishing by infusion, a slight tonic drink, which we take as tea; such as Sage, Balm, &c. Several Labiatæ reduced to powder, are employed as sternutatories and cephalics; for example, Marum, Marjory, and Lavender; others, as Thyme, Serpillum or wild Thyme, &c., are used as perfumes; while others furnish the distilled waters, of which so great a quantity is used, such as Balm, Lavender, Mint, and Rosemary named, improperly, the distilled water of the Queen of Hungary.

"All of them can furnish a quantity, more or less considerable, of volatile oil; a product which is most remarkable, in the Thymes, Origanums, and Lavenders. Finally, the chemists have increased our knowledge of the uniformity of the composition of the Labiatæ, by showing to what a great extent they abound in Camphor. It was long ago remarked, that many of them exhaled the odour of that drug, and some crystals of it had been found by Gaubius, in the oil of Thyme, by Kunkel in that of Rosemary, by Kruge in that of Marjoram, by Cartheuser in that of Wild Thyme, &c. and M. Proust has lately proved, that it exists, even in quantities so great that it might be extracted with advantage, in the oils of Sage and Lavender; and, probably, in all the distilled oils of this order of plants.—pp. 231—234.

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We might quote many other, and perhaps more interesting articles, but wish not to tire the patience of the reader. What we have laid before him, must produce the conviction, that plants which resemble each other in their botanical habit, also resemble one another, in their medical, economical, or dietetic properties; the proposition which our learned and ingenious author proposed to establish.

The third and last part of his Essay is brief. It embraces a tabular view of the orders, with a statement of their conformity or nonconformity to the law of analogy; we have not room for its insertion, and must content ourselves with a summary of general results:

"Of the 150 natural orders, known to botanists, there are," says our author,

"Forty, which are either inert, or the properties at the present time, unknown.

"Twenty two, in which we may presume the law of analogy to exist, although we are, as yet, acquainted with the properties of but a small number of the species.

"Twenty, in which we must admit the law of analogy to be restricted to certain genera, while others are widely separated from them, by important characters.

"Thirty five, in which the law of analogy is evident, but still they present some exceptions.

"Thirty one, in which the law is entirely preserved.

"Three, in which it is violated; but in which we still find undoubted traces of its existence.

"Thus, the law of analogy between the forms and properties, is more or less true, in one hundred and nine orders, and scarcely false in three.

"I think, then, we may draw from this dissertation the following conclusions.

"1. The same parts, or the corresponding juices, in plants of the same kind, enjoy similar medical properties.

"2. The same parts, or the corresponding juices, in plants of the same natural order, possess analogous properties.

"3. The apparent exceptions to these two laws, arise from one or more of the following causes:

a. From the difference in the degree of distinction, real, although

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not always recognized in botanical works, between the species of a genus, and the genera of a natural order.

b. From a false comparison between the organs of similar plants.

c. From the accidental, or temporary state, in which certain vegetables are, at the period when we are accustomed to employ them.

d. From the unequal mixture of different chemical principles, common to all analogous plants.

e. From differences in the mode of extraction or of preparation, a circumstance which modifies the nature of medicines.

f. From this, that we are apt to attach too much importance to properties which are purely accidental.

g. From this, that we do not compare with accuracy, the modus operandi of different medicines.

h. From this, that we do not examine, comparatively, the mode of application of medicines to the human body.

"4. Analogy (founded upon the probability of 109 against 3) leads us to think, that the orders constituting exceptions, which in the present state of the science, cannot be explained away, will come under the laws which we have laid down, when Medicine, Chemistry, and Botany, shall have attained to greater perfection. This is at least extremely probable, seeing, that since the first edition of this work, ten years ago, the number of exceptions has been greatly diminished. At that time, the law was only founded on the comparison of 85 to 7, while it now rests upon the relation of 109 to 3, or triple the former proofs."

With these extracts, we close our account of De Candolle's book. As far as we know, it has not before been presented to the notice of the profession, in America; and in our own language, we have not met with a single distinct and formal treatise, on the subjects which it embraces. The analysis, therefore, with all its imperfections, will not, we trust, be unacceptable to the majority of readers.

To make known the plan and merits of this work was one of our objects; the other was to recall the attention of the physicians of the United States to the cultivation of Botany. Twenty years ago, this delightful science was more attended to by them, than at present. This was chiefly owing to the late professor Barton; who might justly be styled the father of American Medical Botany. His "Collections" are repeatedly quoted by our author, and his "Elements of Botany" were

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republished in England. We should like to see them in the hands of every student of medicine in the United States. After some acquaintance with the elementary works of Lee, Smith, and Willdenow, we do not hesitate to say, that, for the American student in Botany, they are preferable to either. Published nearly a quarter of a century ago, and little known to the majority of our readers, we might, without editorial impropriety, have made them the subject of a Review, designed to recommend the cultivation of Botany; but, in addressing ourselves to medical men, we preferred, as a text, a work professedly designed to illustrate one of the most important connexions between Botany and Medicine.

In regard to books on American Botany, a few remarks may not be out of place. Much, indeed most, of what has been written on the Botany of this country, has been by foreigners; and their works, generally, are not within the reach of the students of the United States. Not to go further back than to the *Flora Boreali Americana*, of the elder Michaux, we may say, that scarcely any book of science is more seldom met with in this country. The *Sylva Americana*, of his son, recently translated, is oftener seen in our booksellers' shops, and the plates which embellish it are of the first order of excellence; but, as its name imports, it is limited to our forest trees; and, in reference to them, is rather economical than botanical. It is not, in short, the kind of practical book which the student requires. The next in order of time is the *Flora Americæ Septentrionalis*, of Pursh, in 2 vols. 8vo, published in 1814. It embraces the general Botany of the United States, and professes to give a description of all the known American plants, up to the period at which it was written. Of course, it contains many species, and a number of genera, not before embodied in any systematic work. The author, a German, resided long, and travelled to some extent, in the United States, especially east of the mountains; and his work was, therefore, a substantial addition to our *Bibliotheca Botanica*; but still it seems to have attracted no great degree of attention. It is mortifying to be compelled to suspect, that the circumstance of his specific descriptions being in the Latin

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tongue, has limited the circulation of his book among the medical profession of this country! To Pursh's book succeeded the *Genera of North American Plants* of our friend Mr. Nuttal, at present, the keeper of the Botanic Garden, attached to Harvard University. It contains a description of the genera, and a catalogue (not descriptive) of the species, known up to 1817. Mr. Nuttal is an Englishman by birth, but has resided long in the United States; and no botanist has ever explored them (particularly the western, almost to the Chippewan Mountains) with a more untiring step. His book is cheap, and should be in the hands of every student of American Botany. With it, and the practical work of Mr. Pursh, and the Elements of Professor Barton, no young man of industry and observation, could be long, in acquiring a competent knowledge of the plants which might surround him.

The works of the two Michauxs, of Pursh, and of Nuttal, are *general*, and we have, therefore, recommended them; but there are others of great merit, which relate to particular districts, and should be in the possession of the students who reside in them, respectively. Of this kind, to quote from memory at the moment, are the *Flora Lancastriensis* of the late Dr. Muhlenburg; the *Flora Philadelphiensis* of Dr. W. P. Barton; the *Florulæ Cestrica* of Dr. Darlington, a pupil of Professor Barton, the *Florula Bostoniensis* of Professor Bigelow, in the opinion of the late Abbe Correa, destined to be the Linnæus of America, but who seems to have abjured the practice of Botany; Dr. Torrey's Botany of the Northern States, and Mr. Elliot's Flora of South Carolina—all published in the United States, and, therefore, within the reach of its students and physicians.

Of foreign systematic works, the best for the American student, is Turton's edition of the Systema Naturæ of Linnæus; but it can by no means be substituted for those which have been named.

We may be asked, however, whether it will not be sufficient for physicians to obtain and study the writings of Woodville, Barton, and Bigelow, on *Medical* Botany? We answer,

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No. These are valuable works, and the two latter, especially, should be in the library of every American physician; but he cannot study them without an acquaintance with the elements of Botany, nor with such an acquaintance can he become a medical botanist, without first acquiring some knowledge of general Botany.

To this end he should collect and arrange an *Herbarium* or *Hortus Siccus* of the plants within his reach, an undertaking of easy and most progressive accomplishment. The observance of but a few rules is necessary. We may state the most important.

1. Collect a specimen in flower, and whenever practicable, another in fruit.

2. When the fertile and infertile flowers are seated on different plants, or different parts of the same plant, collect specimens of both.

3. Place the specimen, before it has *wilted**, between leaves of paper (the finer its texture, the more beautiful will be the appearance of the specimen) and subject it to pressure for 24 hours. Then place it in a fold of fresh paper of a common quality, and remove it from day to day, until it has become dry. During the period of exsiccation a gentle pressure only should be employed.

4. When thus prepared, the specimens representing a species, should be fastened with slips of paper and paste to the third page of a sheet of white paper; on which should be inscribed the class, order, genus, and species of the plant, in the method of Linnæus, and, if possible, its natural order. To

* We beg pardon of our brother criticks, for employing a word not to be found in the English nor even in the American classicks. *Wilted*, however, is neither a new word nor an Americanism; and although not generally used by our writers, deserves to be. A wilted plant is in a state of suspended animation or kind of fainting fit: a withered plant is actually dead and dry. The former can be revived; the latter cannot. The two states differ widely in their external symptoms, as well as their internal constitution, and cannot, therefore, be expressed or described by the same word. The young plant transferred from the spot where it germinated, is *wilted* by the meridian sun; but the following night it may recover its erect position;—if it should not in three days, it will be *withered*.

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which should be added its locality, times of frondescence and flowering, and its popular name.

5. The species should now be arranged into genera, within the duplicatures of larger papers, and these bundles disposed into orders and classes, on the shelves of an *Herbarium*, in a dry situation. In periods of great humidity, it will be necessary to expose them to the open air, to prevent their moulding. The *acarus* and other minute insects which prey upon them, may be repelled or destroyed by camphor, or a solution of the deuto chloride of mercury, in distilled or rain water.

It is unnecessary to add other instructions; and, admonished, by a feeling of weariness, of what our readers are likely to suffer, if longer detained, *in sylvis tenebrosis*, we shall now permit them to escape.

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MISCELLANEOUS INTELLIGENCE.

I. ANALECTA.

1. Biancini *on the communication between the blood vessels of the Uterus and Placenta.*—M. Biancini injected the blood vessels of a woman who died in child-bed with inertia of the womb, the placenta being still undetached from the uterus. He found the injection in the vessels of the chorion and amnios; and having examined the tortuous arteries of the uterus, he found that they penetrated the tissue of the placenta, spread themselves over its membranes, and deposited the injection in the cells described by Hunter and Meckel. In a young woman who died eight days after delivery, a small portion of placenta retained its adherence to the womb. In this case, injection forced into the uterine arteries, not only passed into the residuary portion of placenta, but also was extravasated into the cavity of the womb, and into the vagina, from the lacerated ends of what he calls utero-placental arteries.

But the most extraordinary facts in support of M. Biancini's opinions, are those elicited from the examination of the subject in brutes. Not only did he find in cats, that the colouring matter of fine injection passed to the umbilical vein, but he actually found the vermilion to have tinged the vena cava superior, and some of its smallest ramifications. Such at least is the statement in the Journal des Progres. We see not very readily why the vermilion should be found in the *upper cava.*

M. B., to make assurance doubly sure, next inverted the modus operandi. He injected mercury into the umbilical arteries of a calf, and found not only that it passed into the placenta, but directly into the uterine veins, by nine short cylindrical branches, which he calls placento-uterine veins.—*N. A. M. & S. Journ. for July*, 1828.

2. *New Views of the Fœtal Circulation.*—We find in the Bulletin des Sciences Medicales for February, a notice of the work of Dr. H. Fr. Kilian, published at Carlsruhe, in 1826.

In the work is contained an account of the development of the heart of the fœtus, from its first appearance until the third and fourth month of gestation. M. K. asserts that, in the early stages of pregnancy the inferior cava opens both into the right and left auricles, by distinct mouths. At the commencement, the *left* opening is much the largest; but towards the close of the ninth month, the *right* has become much the largest. The valve of Eustachius and the valve of the *foramen ovale* constitute part of the inferior cava,

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and are to be considered as duplicatures or prolongations of the internal coat of the vein. These valves appear to be formed at the same epoch; but the valve of Eustachius is more rapidly and perfectly developed than the other. The valve of Eustachius, which principally constitutes the orifice of the inferior cava of the right auricle, serves to direct the two great columns of blood brought by the superior and inferior venæ cavæ, so that one may pass before the other, without interference or mixture. The valve of the foramen ovale, or rather the left half of the lower cava, is a *vascular branch*: its use is gradually to effect the exclusion of the *cava inferior* from the left auricle, and favour its passage or transfer to the right auricle. The septum of the heart is not perforated; the foramen ovale passes behind it through a notch. There is, properly speaking, no pulmonary artery in the fœtus. The trunk that bears the name, is continuous with the *canalis arteriosus*, and constitutes the origin of a vessel which goes to the lower half of the body, and may be named *abdominal aorta*, to distinguish it from the cerebral aorta which rises from the left ventricle; so that the fœtus has a double arterial circulation, one derived from the right ventricle, which goes to the body, and the other from the left, which supplies the head.

M. Kilian's doctrine of the fœtal circulation is as follows. Blood comes from the cells of the placenta, through the umbilical vein to the liver; it is there divided into two unequal portions, the largest of which circulates in the vessels of the liver, while the smaller portion goes through the *ductus venosus* into the vena cava. Here the blood of the ductus venosus, of the liver, and of the lower extremities, is mixed. Just before it enters the heart, the current is divided, as above stated; one stream enters the right at the same moment that the other enters the left auricle. Upon the contraction of the auricles, the ventricles are filled, and, in their turn, they throw it out *without any mixture taking place;* for that of the right goes to the descending aorta exclusively, and that of the left is distributed upwards. The author asserts, that if different coloured injections be thrown into the aorta and pulmonary arteries of a fœtus, at the same moment, no mixture of colours will take place. The rest of the circulation, namely back into the veins, he explains in the ordinary manner.—*Ibid.*

3. *Puerperal Peritonitis cured by Ice.*—A female was seized with severe symptoms of peritonitis on the fourth day after parturition. She was bled to ℥16; ice water for drink, and ice to the abdomen. In three hours, the severity of symptoms was diminished; thirst and vomiting had disappeared; abdomen less tumid, and pressure less painful. In the evening, amelioration still greater; the belly quite soft; a natural stool occurred, and the patient had some sleep. The application of ice was alone continued, and next day perspiration came on. The mammæ filled with milk; the lochiæ soon appeared, and in four days no symptom of peritonitis remained.—*Ibid.*

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4. *Congenital absence of Sensation and voluntary Motion in a Female.*—This girl was born rather prematurely. She gave no sign of the usual instinctive desire for the breast; was, with difficulty, taught to suck, and appeared to be very feeble. One eye was smaller than the other. A few weeks after birth, she was seized with convulsions: no medical prescriptions had any power to restrain them, and they exceeded a hundred in twenty four hours. As she continued to grow in length, the defects in motion and sensation became more apparent. Blindness came on; she became quite deaf, and never had a second dentition. Taste seemed tolerably perfect. She never acquired any thing like the power of voluntary motion, and attained the 17th year without having held up her head, raised her hand to her mouth, or set her foot to the ground. She never uttered any thing like an articulate sound, and a feeble cry or whine was believed to indicate the want of food. When fed with sweet articles, the countenance exhibited an expression of satisfaction.

She never had a stool without medicine, and never acquired any command over the sphincters. On the day when she completed her 17th year, she died in a manner so gradual, that the attendants thought her asleep, when she was really dead.

With regard to the morbid appearances on dissection, the following alone seem to possess any interest.

On removing the brain from the basis of the scull, so as to expose the nerves, he could trace each pair taking their usual course to their destination; and they all appeared firm and healthy, as in the most intelligent individual. But in the base of the scull itself not a vestige of the dura mater was to be seen. Its place was supplied by a thin semitransparent membrane, very lax and irregular, so that it afforded no protection to the nerves in their exit from the scull.

On the back part, likewise, the whole or the greater part of the *tentorium* was deficient, thus allowing the whole weight of the brain to rest on the cerebellum.

The author's opinion is, that the girl's deficiencies were occasioned by the want of dura mater on the base of the scull, the mass of brain being thereby allowed to press on the nerves of sense as they passed through their separate foramina, and thus their vital principle became destroyed; and that the cerebellum, not protected by a tentorium, was also pressed upon by the cerebrum, which also suffered in its turn.—*Ibid.*

5. *Tetanus.*—M. Lepelletier, surgeon in chief to the hospital at Mans, has always found, when dissecting cases of traumatic tetanus, that there were very visible traces of phlegmasia in the meninges of the medulla spinalis, especially of the arachnoid at the roots of the nerves, and over the latter, during their progress through the spinal canal. After a case of well characterized tetanus with trismus, opisthotonos, &c., the sacral nerves, especially the sciatic, exhibited spots and numerous striæ of a vermilion red. When divided longitudinally, the nerves presented the same strip; and when cut trans-

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versely, exhibited a multitude of bright red specks, which were the orifices of vessels. All these appearances existed in the neurilema, either in the portion covering the nerve, or in that which separated its different fibrillæ; but principally in the former. If one of these divided nerves was pressed, it gave issue to a considerable quantity of blood. The medulla spinalis, when simply laid bare, exhibited bluish striæ, and its tunics seemed distended by a fluid. The fibro-cellular membrane, (?) when incised throughout its whole length, contained, on the inside, numerous red patches, especially at the origin of the nerves: and the arachnoid was particularly remarkable for a vascular network very strongly marked.

The arachnoid of the brain was considerably injected, but presented neither patches nor adhesions.

In another case of tetanus, the disease was provoked by the left arm having been crushed; and the first tetanic symptoms were manifested in the arm. The neurilemas, principally of the ulnar and median nerves, were red, and inflamed quite up into the axillary plexus. The spinal pia mater and arachnoid showed many strongly marked inflammatory spots; but all these appearances were confined to the side which had received the injury. The strongest characteristic marks of inflammation were found in those parts of the medulla spinalis which were most in connexion with the brachial nerves, the first point of departure of the neurilematic inflammation. It is exactly in those muscles, whose nerves arise from the portion of the spinal marrow already pointed out, that the propagation of the disease was observed. Thus the respiratory muscles exhibited the tetanic stiffness in all its force; and the patient was several times on the point of suffocation from the mechanical suspension of respiration; while the trismus was only consecutive, and the jaws could be separated to the very moment of death.

The resemblance of these views to those of Dr. Saunders, of Edinburgh, will be noticed.

M. Lepelletier concludes, from these and other cases, that tetanus is an inflammation of the neurilema of the nerves and spinal marrow; (would he not include the trigeminus of the head in the case of trismus?) that traumatic tetanus spreads from the circumference to the centre, thus attacking the nervous tree from the branches to the trunk; that tetanic patients die from exhaustion, with the exception of those instances in which respiration is actually suspended long enough to produce a true asphyxia; and, finally, that the rational treatment for this formidable malady must consist in lowering the vitality of the injured organ in particular, and of the whole economy in general.—*Ibid.*

6. *Mercury absorbed into the System.*—The analysis lately made in the chemical laboratory of the faculty of Paris, of the mammary and salivary glands, mesentery and large intestines, of a young woman who had fallen a victim to a puerperal peritonitis, and who during the disease had been subjected to large mercurial frictions (12 oz.

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5 dr. in the course of twelve days), exhibited mercury in its metalic state in these organs. This result, though opposed to the assertions of many chemists and a great number of physicians, confirms the researches of Fourcroy, Dumeril, Orfila, and Cruvelhier, who have discovered mercurial globules in the bones, cerebral substance, and nerves; and no longer allows us to doubt of the fact, notwithstanding the warmth with which it has been, at different epochs contested, and the ridicule attempted to be thrown on it.—*Ibid.*

7. *Amputation of the Lower Jaw.*—This operation has now been so frequently executed with success, that surgeons are directing their attention to the best means of preventing, as much as possible, the subsequent deformity. The enterprising and active surgeon, M. Lisfranc, in November last, extirpated the left portion of the lower jaw from the chin to the ramus, for a sarcomatous tumour involving the bone, extending under the tongue, and contaminating, in a slight degree, the lymphatic glands. To prevent the deformity, M. Lisfranc, instead of making the ordinary transverse incision across the cheek, made a perpendicular cut from the middle of the free border of the lip to the base of the jaw, dividing all the soft parts to the bone. The incison was continued an inch further in the same direction; it was then made transversely from before, backwards to a point one quarter of an inch below and before the angle of the jaw, and extending only through the skin and cellular tissue. The flap thus formed was dissected upwards, and the bone and diseased mass extirpated in the usual manner, without any troublesome hemorrhage. The fluids from the mouth and wound had a free outlet in a depending position; part of the wound healed by the first intention, part by granulation; and a fistula, kept up by the discharge of saliva, &c., was formed on the side of the neck. M. Lisfranc succeeded in curing it, by placing in the mouth, at a point corresponding to the external orifice, a small piece of sponge which absorbed the fluids that retarded the cure. The sinus then healed in four days. Little deformity resulted; the cicatrix being nearly covered by a cravat. The left side of the jaw is but slightly depressed; while the right side has deviated a little to the left, but can easily be replaced in its ordinary position. The left ramus of the bone is carried a little inwards. The patient speaks with much distinctness and can take solid food.—*Ibid.*

8. *Writ for the Medical Convention of* 1830.—Whereas the Convention that was held at the City of Washington, in the month of January, 1820, for forming a Pharmacopoeia for the United States of America did resolve that the President of that Convention should, on the 1st day of January, 1828, issue Writs of Election to the several incorporated State Medical Societies, in the northern, middle, southern, and western districts of the nation, requiring them to ballot for three Delegates to a General Convention, to be held at Washington, on the 1st day of January, 1830, for the purpose of revising

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the American Pharmacopoeia; and whereas the several Institutions, as aforesaid, are, by the same authority, requested to forward to the President, on or before the first day of April, 1829, the names of the three persons so chosen, with sundry other provisions contained in the historical introduction to the work, to which the reader is referred:

Now, therefore, I SAMUEL L. MITCHILL, by virtue of the power vested in me by the Convention of 1820, do hereby give notice to all the incorporated Medical Societies, Colleges of Physicians and Surgeons, Medical Schools, and Faculties of Universities and Colleges, and all other authorized Bodies, that they choose proper persons to represent them in the General Convention to be held in January, 1830, for revising the Pharmacopoeia.

Given under my hand, this first day of January, 1828, at the City of New York.

SAMUEL L. MITCHILL, *President.*

9. *Treatment of Poisoned Wounds.*—M. ANTOINE VERNIERE has very recently announced to the Academy of Sciences a new method of treating poisoned wounds, which is, to say the least of it, ingenious, and philosophically deduced from the late discoveries in the physiology of absorption, and which, if it stands the test of future experiment, will render the treatment of external poisoning exceedingly simple. The reader who is acquainted with the progressive researches of M. Magendie on venous absorption, will remember that physiologist discovered that absorption is impeded, or even entirely prevented, by producing an artificial state of venous plethora, by injecting tepid water into the veins. M. Verniere's method of cure consists in taking advantage of this discovery, establishing a general venous plethora, and then removing the plethora as nearly as possible from that part only where the poison had been introduced, by opening a vein proceeding from the part. Thus, three grains of the alcoholic extract of nux vomica were thrust into the paw of a dog, and a tight ligature was without delay tied round the limb. Warm water was then very slowly injected into the jugular vein, to as great an extent as the animal could safely bear, and the ligature was removed. Half an hour was then allowed to elapse, which, in ordinary circumstances, would have been much more than sufficient to enable the poison to act. The ligature was next replaced, but so as to obstruct the venous circulation only, just as in performing the operation of venesection; the principal vein of the limb was then opened immediately under the ligature, and the blood which flowed out was collected. The blood was then carefully washed away, a little more was allowed to issue, and the ligature was finally removed. None of the symptoms of poisoning with nux vomica ensued, and the slight signs of venous plethora which remained were removed by a bleeding from the jugular vein. The blood which had been withdrawn from the vein of the fore-leg, when cautiously injected into the vein of another dog, caused violent tetanus and almost instant death.

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The explanation given by M. Vernière of the mode in which this operation effects the removal of the poison, is the following:—"The only blood which can become impregnated with the poison, is that which flows through the open vein; for it is only that vein and its branches which are relieved from the artificial plethora, and so rendered capable of carrying on the function of absorption. On the other hand, by means of the ligature, the current of the blood taking place from the artery only towards the opening in the vein, the poison introduced into the vessels is forced to follow the course of the blood, and is consequenrly thrown out of the system with it. "Absorption, so deadly in all other circumstances, is thus converted into the means of safety. It searches for the poison in the depths of the tissues, and transports it into the veins, to be thence expelled from the body." The general venous plethora is in another respect advantageous: It enables us to transmit, without fear of syncope, a considerable quantity of blood through the poisoned tissue, so as to clear it of the remains of the poison by means, as it were, of an internal washing."—*Am. Med. Recor.*

10. *Case of Death caused by the external application of Opium.*—The application of opium in considerable quantity, to the skin when deprived of its cuticle, is a practice by no means free from danger; and when it is resorted to for allaying irritation, it is necessary to watch the patient carefully. We are acquainted with an instance in which deep coma was induced by the application of an opium poultice to the scrotum previously deprived of the cuticle by a blister, and which would in all likelihood have proved fatal, had not one of the patient's friends called accidentally to see him, and discovered the cause of the state of sopor. The following is an example of death originating in the same source, although the skin was not deprived of its cuticle. A soldier, thirty two years of age, was attacked with phlegmonous erysipelas of the fore and outer part of the right leg, on account of which a linseed poultice, moistened with *fifteen drops* of laudanum, was ordered to be applied to the limb. Next morning he was found in a state of deep sopor, with the face pale, the eyelids tremulous and half open, the pupils contracted, the lips distorted, the muscles of the face affected with spasm, and those of the limbs with convulsions. The surgeon having remarked a strong odour of opium, as well as a yellow coloration of the bandage which enveloped the limb, he had it removed, and found not only the bandage, but all the compresses soaked with laudanum, which was flowing copiously from the poultice. The attendant whose duty it was to make up the poultice, had left it in charge to a hospital servant, without telling him what quantity of laudanum was to be used; and the latter had ignorantly used towards an ounce. Antispasmodics, emetics, and sinapisms, were resorted to; but in vain. The convulsions increased, the pulse became more and more feeble, and the patient died. On inspection, some red points were seen on the arachnoid, a strong opiate odour was exhaled from all parts, and the heart, stom-

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ath, and brain, were in a healthy state. In the blood vessels no trace could be found of the poison which had been absorbed.—*Ibid.*

11. *Sounding the Internal Ear in Deafness.*—New improvements and discoveries in practical surgery are almost daily occurring. Civiale's lithontritia, Dupuytren's vital dilatation of stricture of the urethra, Deguise and Beclard's operation for wounds of the duct of the parotid gland, the restoration of the superpubian, or high operation of lithotomy, Higginbotham's application of nitrate of silver externally in several kinds of inflammation, besides many other processes which it would be too tedious to attempt in this place to enumerate, but which must have been noticed by all the diligent readers of the Recorder, are more than sufficient to demonstrate the flourishing state of this important branch of the healing art.

Where deafness is owing to obstruction of the Eustachian duct and disease of the internal organs of hearing, M. Debau the younger, has succeeded in removing it by inserting a tube, which he calls a sound, into the duct, and through it introducing air in order to distend it, and to expel mucus or other matter. Two cases are related, in which he perfectly succeeded in the operation, and the restoration of the hearing was complete. One of them was an obstruction of the internal orifice of the Eustachian duct, the sequel of a chronic inflammation, which had frequently reached to the cavity of the tympanum; the second was a chronic inflammation of the Eustachian duct, with contraction. In the first case, the restoration of hearing was instantaneous, as soon as air had been introduced to distend the cavity. In the second patient, several trials were necessary, as it was some time before the end of the instrument, by proper and moderate force, could penetrate into the cavity of the tympanum.

It is obvious, that the most minute anatomical knowledge, and a happy manual dexterity, ought to be possessed by the surgeon who would expect to succeed in introducing the instrument. The operation is asserted to be neither disagreeable nor painful, in any peculiar degree, to the patient.—*Ibid.*

II. ORIGINAL.

12. *Report on the Diseases of Cincinnati in the Spring of* 1828, *concluded from page* 176—*June number.*—4. *Ague and Fever.*—Cases of Ague occurred this Spring, as usual, and, indeed, had presented themselves though, less frequently throughout the Winter. In almost every instance the individual affected, had experienced some form of autumnal fever in the preceding year, or two years before. We feel justified in the conclusion, therefore, that our vernal intermittents are

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in reality but relapses. Their predisposing cause, at least, is the morbid impress of the foregoing year. For their immediate reproduction an exciting cause, in general, some violation of the *non-naturals* (to revive the quaint nomenclature of our professional ancestors) was necessary.

The symptoms which they exhibited were various. In some cases they assumed the character of periodical headache or *sun pain;* in others the paroxysm consisted chiefly in pains and achings of the muscles and periosteum of the long bones; in some there was but little chilliness and a great deal of yawning; in others the cold stage amounted to a shake; in all, the hot stage was either slight, or, if violent, of short duration. The type was, in different cases, both tertian and quotidian. In some instances the complaint assumed a congestive or malignant aspect; but it was in aspect only, for we met with no case in which it proved fatal, as the malignant intermittents of Autumn are wont to do. A few individuals had repeated attacks; the distance between them, and the number of persons affected becoming less and less, as the weather became warmer. The subjects of it were chiefly emigrants from aguish situations, or inhabitants of Cincinnati who had travelled the preceding year.

Vernal intermittents are often complicated with enlargements of the liver and spleen, especially the latter; which are the consequences of repeated attacks of fever; and by augmenting the debility of the patient, increase his liability to relapses.

In the treatment of the vernal intermittents of the present, as of preceding springs, we have not found a debilitating method efficacious. We met with no case, in which *bloodletting* was required. *Emetico-cathartics* were, in general, requisite; if, indeed, a deranged state of the secretory functions of the liver and gastro-enteritic membrane call for that class of medicines. We were accustomed to administer them; but are by no means satisfied that they are always necessary. Our reliance was on *tonics* and *stimulants;* and, in the results of their liberal exhibition, we were seldom disappointed. Our practice was to commence their administration at the earliest pos-

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sible period of the attack; and to continue it through the paroxysm as well as the intermission. We have, in some cases, employed the *bark*, in substance, united with powdered *cloves*, and the *bitartrate of potash*. In this composition the spice reconciles the stomach to the impress of the bark, while the hydragogue and diuretic virtues of the bitartrate, contribute, signally, to the prevention, or removal of the visceral enlargements of which we have spoken.

And here we may take occasion to say, that for the cure of the enlarged spleen or ague cake, we know of no more successful method, than the administration of tonics and diuretics, combined. Of the former the bark is the most powerful and appropriate: of the latter, we have found the nitrate, and bitartrate of potash and the squill, most successful. In these cases, general corroboration and increased secretion, are the conditions requisite to a cure; and, if it be attempted by either method, alone, the success will be less perfect. Whatever plan is adopted, however, we must persevere, for weeks, and, sometimes, even for months, before a cure will be effected. But increased renal secretion is not the only kind that will answer in these cases. Much may be done by exciting the liver; for which purpose, the *pil. hydrargyri* may be administered in suitable portions, at night, the bark being given by day. Or, we may act on the intestinal mucus membrane, with jalap or the compound powder of that root, united, with the cinchona. But we must return to the subject of Ague and Fever.

Within the last three months we have repeatedly substituted the *sulkpate of quina*, for the bark itself, in vernal intermittents, and have found it successful. In several instances, we have united it with the *sulphate of morphia*. The following formula has answered, in most cases:

℞. sulph. quin. gr. viij.
—— morph. gr. j.
Mix and divide into 8 powders.

One to be taken every two or three hours, without any regard to the paroxysm. In some instances the proportion of sulph. morphiæ was found too large; and in others the sulph.

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quinæ too small. Mitigation of fever, tranquility, and perspiration, generally followed on the use of this compound. In a few cases, we saw it ejected, apparently in consequence of the gastric irritation which itself excited; but, by perseverance, the stomach, at length, became quiet, and the desired effect was produced.

We shall only add, that we have found an attention to the state of the skin, and the daily use of small quantities of bark, or some other bitter, the most effectual means of preventing relapses.

13. *Diarrhœa.*—In common years, we are not presented with cases of diarrhœa, till near summer. In the present spring it was otherwise. Early in May, when there was no intense heat, nor any obvious atmospheric cause; no inconsiderable number of persons, chiefly young men, were attacked with this malady. It was not in general attended with vomiting. Some of them had considerable fever, and in some, the symptoms strongly inclined to those of dysentery. We heard of no fatal case. It continued to prevail for two or three weeks. The treatment required was simple. An emetico-cathartic, followed by the compound powder of ipecac, when there was fever, or by a pill of opium, when no fever was present, generally moderated all the symptoms, and sometimes even effected a cure. In other cases it was necessary to administer a second cathartic after the suspension of the peristaltic action by the opiate, and then to quiet the system by the action of a second anodyne. After which, recovery in general took place, without further difficulty.

In the latter part of May, cholera and dysentery began to show themselves, as usual; but being strictly summer epidemics, we shall omit any notice of them, until we come to make report of the diseases of that season.

14. *Fractures of the Thigh.*—The great number of contrivances, which have been offered to the profession, for the cure of fractures of the thigh bone, prove that a good method has not yet been invented. In the United States no apparatus is in such general use, as that of Desault; but, I believe, few practitioners are satisfied with it, or any of its modifications.

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We have ourselves been followers of the great Parisian surgeon; but have encountered the same difficulties with our brethren. The soft parts at each extremity of the limb have, generally, become excoriated; and the patient so restless under that condition, united with his long continuance in an irksome position, that when the time for reunion had arrived, it was almost impossible to maintain the necessary degree of extension.

Considering that, in reference to the proper length of the limb, extension is not required for the first eight or ten days, during which the difficulty of maintaining it, from the fulness of habit and unsubdued muscular power of most patients, at the time of the accident, is far greater than at any other period, we were lately induced, in the case of a boy ten years old, to omit the application of the apparatus, till the second week after the casualty.

When called to the patient, we applied a muslin roller, moderately tight, from the toes to the hip of the affected limb, then placing the patient on his back on a hard bed, we drew up and flexed both knees, over a double inclined plane formed out of bed clothes; and, finally, with another, bound the two legs together throughout their whole length. The patient was left in this position, till the inflammation and fever consequent upon the injury, had subsided, and by abstinence and other antiphlogistics, he was brought into a state of general relaxation. The apparatus of Desault was then applied, and adequate extension effected, with but little difficulty or excoriation. In due time the patient was released from confinement; when his limb was not shortened in the least, nor in any manner deformed.

We would here ask, whether in all the latter stages of the treatment, the limb might not as well be placed over the double inclined plane, and supported by the other, as to be kept in the splints of Desault. As soon as the new osseous matter has acquired a tolerable degree of induration, it is probable, that the weight of the leg, and the support of the other limb, would be quite sufficient to prevent shortening and deformity. Thus the period of permanent extension might,

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perhaps, be reduced to a single week; and by resorting twice to the method of Pott, and once to that of Desault, the sufferings of the patient would be mitigated, while the chances of decrepitude might be lessened.

Not being professional Surgeons, we throw out these little hints, without pretending to know all that may have been suggested by others; and, in no feeling of anxiety for the manner, in which they may be received by the profession.

15. *Our Board of Health.*—More than twelve months ago, the City Council of Cincinnati instituted a Board of Health; and delegated to it a variety of advisory and other powers. As yet, we believe, the public have been favoured with no manifestation of its wisdom; but whether from its *vis inertia*, so characteristic of learned bodies, or the previous excellence of our police, rendering all interference superfluous, we are not fully informed. It is believed, however, that the said conservators of the public health, have but seldom been together; and that various parts of the city abound in evidences, that its police regulations are susceptible of improvement. We would respectfully suggest to the Council, the propriety, of constituting the Board, in future, *entirely* of medical gentlemen; who, to avoid the imputation of willingly suffering the public causes of disease to multiply upon society, would be induced to discharge their duties with vigilance, and good will. Meanwhile we are happy to be able to say, that, notwithstanding every appearance of neglect, the city was never healthier, in July, than at present.

16. *Splendid Engravings of American Birds.*—We have been lately favoured with the prospectus of a work on the birds of the United States, by Mr. J. J. Audubon, well known in these interior states, and for some time one of the artists of the Western Museum, in this city. When in that situation, we had frequent opportunities of inspecting his coloured crayon, drawings, of the birds of this country, and can bear testimony to their great beauty and fidelity. Mr. Audubon is now in London, where his publication is to be made. We deem the following extracts, from his prospectus not inappropriate, for a journal which circulates, extensively, in the re-

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gion of country which has supplied the very originals to which he refers.

"To those who have not seen any portion of the author's splendid Collection of original Drawings, it may be proper to explain, that their superiority consists in every specimen being of the full size of life, portrayed with a degree of accuracy as to proportion and outline, the result of peculiar means discovered and employed by the author, and lately exhibited to a meeting of the Wernerian Society. Besides, in every instance where a difference of plumage exists between the sexes, both the male and the female Birds have been represented. The author has not contented himself with single profile views of the originals, but in very many instances he has grouped them, as it were, at their natural avocations, in all sorts of attitudes, either on branches of trees, or amidst plants or flowers. Some are seen pursuing with avidity their prey through the air, or searching diligently their food amongst the fragrant foliage; whilst others of an aquatic nature swim, wade, or glide over their allotted element. The insects, reptiles, or fishes, that form the food of the birds, have been introduced into the Drawings; and the nests of the birds have been frequently represented. The plants are all copied from nature, and the botanist, it is hoped, will look upon them with delight. The eggs of most of the species will appear in the course of publication.

"The great interest which has been excited by the exhibition of these Drawings, and the flattering praise which has been bestowed upon them in Edinburgh, Liverpool, and Manchester, have induced the author to publish Engravings of them, upon a scale of elegance never before attempted in this or any other country. He has been encouraged to commence such an arduous undertaking, at the suggestion of some of the most eminent naturalists both in America and Great Britain; and he is proud to acknowledge, that their patronage has been extended to him towards the encouragement of the work; and he trusts to their support and that of the public, enabling him to complete one of the most splendid publications which has ever appeared."

The work will consist of 300 figures, all as large as life; and coloured according to nature. When completed, it will cost about $560. We are happy to see, attached to the prospectus, a list of 120 subscribers, headed by George IV.

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Gentlemen in the United States who wish to subscribe, may address themselves to *Mr. John James Audubon, No. 95, Great Russell Street, Bedford Square, London.*

WESTERN MEDICAL LECTURES.

17. *Medical College of Ohio.*—The Lectures of this Institution will commence on the first Monday in next November; and will continue without intermission, till the end of the ensuing February, on the following subjects, viz:—

Anatomy and Physiology, by JEDEDIAH COBB, M. D.
Materia Medica, by CHARLES E. PIERSON, M. D.
Surgery, by JESSE SMITH, M. D.
Chemistry and Pharmacy, by Rev. ELIJAH SLACK, M. D.
Obstetricks and Diseases of Women and Children, by JOSIAH WHITEMAN, M. D.
Theory and Practice of Medicine, by JOHN MOORHEAD, M. D.

The price of the Anatomical Ticket is $12; that of each of the others is $10.

The fee for Matriculation, including the use of the Library, and admittance to the Hospital, is $3. In the Hospital, (the Commercial Hospital and Lunatic Asylum of Ohio) a regular course of Clinical instruction is delivered on the most important of the cases presented.

The cost of graduation is $21, being three dollars to each Professor and three for the Diploma. The Commencement for conferring degrees, is held immediately after the close of the Examination at the end of the Session.

From its connexion with the Commercial Hospital and Lunatic Asylum of Ohio, this Institution furnishes, beyond question, such opportunities of acquiring anatomical knowledge, as cannot be *surpassed* elsewhere in the Western country.

By order of the Faculty,
JEDEDIAH COBB, DEAN.

Medical College of Ohio, Cincinnati,
July 9th, 1828.

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18. *Transylvania University—Medical Department.*—The Medical Lectures will commence, as usual, on the first Monday of November, and terminate on the first Saturday of March.

Benjamin W. Dudley, M. D., on Anatomy and Surgery.
Charles Caldwell, M. D., Institutes and Clinical Practice.
John E. Cooke, M. D., Theory and Practice of Medicine.
William H. Richardson, M. D., Obstetricks and Diseases of Women and Children.
Charles W. Short, M. D., Materia Medica and Medical Botany.
James Blythe, D. D., Chemistry and Pharmacy.

Each Professor lectures daily, Sabbaths excepted. The Ticket to the anatomical and surgical course is $20; each of the others is $15. Matriculation, with the use of the Library, $5. The Graduation Fee is $20.

C. W. SHORT, M. D., Dean.

Lexington, Kentucky, July 28th, 1828.

TO SUBSCRIBERS.

THE undersigned, partly in consequence of a declining state of health, has been under the necessity of disposing of the "*Western Journal of the Medical and Physical Sciences.*" The Editor, Dr. Daniel Drake, is the purchaser; and will, hereafter, be the sole Proprietor and Publisher as well as Editor. To him or his authorized agents, therefore, in future, all letters of business must be directed, and all payments remitted.

E. S. BUXTON.

Cincinnati, Ohio, July 31st, 1828.

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TO THE

PHYSICIANS

OF THE

WESTERN STATES.

At the close of the last number of The Western Journal of the Medical and Physical Sciences, the subscribers were informed that it has been transferred to the undersigned, who has, therefore, unexpectedly become at once Proprietor, Editor and Publisher.

It is not without regret, that he finds himself thus situated; as his editorial duties were, of themselves, sufficient to occupy most of the time, which professional engagements left at his disposal. Inured, however, to hard labour, and deeply interested, as he has become, in the success of the undertaking, he is far from cherishing a feeling of discouragement. Having, in 1819, issued proposals for a similar work, and obtained a considerable number of subscribers, he was the first to project such an enterprize in the Western States—although various causes, chiefly growing out of his connexion with Medical Schools, precluded him from entering upon its performance before the opening of the year 1827. Since that time he has encountered several unexpected difficulties; but indulges the hope that they have at length disappeared, and that the work will be rendered as permanent, as such publications generally

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are: whether it can be made as worthy of public patronage, must depend, not on his own exertions merely, but on the contribution to its pages, with which he may be favored, by the enlightened Physicians, Surgeons and Naturalists of the great region which it is designed to represent.

Such contributions he, again, respectfully, solicits, and would here take occasion to indicate certain subjects, to which he would, especially, invite the attention of his Western brethren.

1. Rare or singular cases of disease. To report all cases would be impracticable and absurd. To report the successful *only*, is uncandid. Cases which go to the suggestion of a new principle or rule of practice; which either weaken or sustain a disputed point; which, terminating unfavorably, may serve as a warning to the profession; and, finally, those which occur with exceeding rarity, may always be published with advantage to others, and credit to the reporter.

2. New forms of disease, depending on causes, either discovered or unknown.

3. Annual epidemics, in which the reporter should always omit, as far as possible, whatever is common to the malady in all its visitations, and occupy himself with its peculiarities.

4. Brief or synoptic reports, consisting of a sort of account current with the weather and diseases, of the different seasons.

5. Accounts of new medicines; with a clear discrimination between their effects and the effects of those for which they are offered, either as auxiliaries or substitutes.

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6. Experimental treatises on our *native* medicinal plants.

7. Chemical and therapeutick accounts of our mineral springs.

8. Comparative histories of the diseases of the negroes and whites.

9. Facts for an estimate of the peculiarities, which the diseases prevailing on board the steam boats of the Western and Southern waters may present.

10. Reports on the diseases in our penitentiaries.

11. Detached facts, in clinical medicine, which may be proper for insertion under the head of Original, Miscellaneous Intelligence.

12. Notices of the discovery in the West and South, of such minerals, as are in any way employed in pharmacy.

The Editor would not, however, absolutely restrict his correspondents to new facts; inasmuch as he believes that on many subjects a new arrangement of old ones, is imperiously required; he would be happy, therefore, to receive and publish essays and dissertations on all subjects in the profession, provided they develope, either new principles or new practical maxims.

In regard to the rules which should be observed in the preparation of papers, for a Medical Journal, he will take the liberty of offering to his junior brethren a few remarks.

In such papers, the first excellence is *truth*. Every thing that is published in a journal of medical science, should, as far as possible, be divested of error; for it may all, sooner or later, influence the treatment of the sick, whose lives might be jeopardized, in consequence of perversions or suppressions

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of the truth. The next great requisite is *perspicuity;* that what the writer has observed and thought, may be readily and clearly comprehended. The next is *conciseness*; which many readers would, in reality, place at the head of the column of good qualities:— And it cannot be denied, that they would have much reason on their side; for the quantity that is published, in the journals, and detached works, of the present age, is really enough to deter the timid and the indolent, from all reading. *Originality*, is another important property, which should never be wanting. Mere learning, and laborious rumination of that which has been masticated by others, will neither advance the interests of the profession, nor satisfy readers of good sense. Finally, those who write for medical journals, should not consider the minor rules of composition beneath their attention. If advanced in years and reputation, their example will be authoritative, and should, therefore, be a good one: If young, they should seize every occasion to improve themselves in the art of writing. Indeed no member of the profession, either high or low, should consider himself at liberty to disregard the laws of *orthography*, *etymology*, *syntax* and *collocation* in any thing which he presumes to address to his brethren. Lastly, in mercy to editors and compositors, he should write (or procure to be written) an unaffected and legible hand; without which, he has, in fact, no guaranty, that the printed will be a correct copy of his written communication.

The undersigned, regarding the "labourer as worthy of his hire," proposes to his brethren of the West and South:

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I. A receipt for the year's subscription to the Journal, for every paper, of not less than four pages, which shall be deemed worthy of insertion.

II. One dollar a page, for every communication, exceeding four pages, which may, from its merits, be entitled to publication.

III. A premium of fifty dollars, for the best dissertation on each of the following topics:

1. The general principles of the pathology and treatment of the diseases, of the negroes of the Southern States; with a particular application of them to the malady generally denominated Negro Consumption; reference being constantly had to the constitutions and diseases of the whites of the same region, as standards of comparison.

2. The treatment of autumnal fever on the principles of Bronssais; with a comparative estimate of the success of that plan and the one previously pursued, illustrated by original cases.

3. The remote cause and morbid anatomy of the disease denominated in the Western country the "*Sick Stomach;*" with a successful discussion of the question, whether it is a new disorder.

4. The successful application of the process of Civiale, to the destruction of the *calculus vesicæ*, established by American cases.

The dissertations to be accompanied, as is usual in such cases, by private letters containing the names of the authors; which letters will not be opened until a decision is made on the respective merits of their papers.

It only remains for the undersigned to add, that, having divested himself of all connection with medical

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schools, he proposes to bestow upon the Western Journal, now the only publication of the kind in Cincinnati, all the time and attention that can be spared from professional duties; and that, in dedicating his humble abilities to its establishment and dissemination, he hopes to be honored with the countenance and co-operation of many of his senior brethren of the West; while he confidently anticipates the assistance of his former alumni, both private and public, wherever this appeal may find them.

DANIEL DRAKE, M. D.

CINCINNATI, OHIO, AUGUST, 1, 1828.

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THE

WESTERN JOURNAL

OF THE

MEDICAL & PHYSICAL SCIENCES.

AUGUST, 1828.

ESSAYS AND CASES.

ART. I—*Observations on* MR. GUTHRIE'S *Double Cataract Knife.*

BY THE EDITOR.

MR. GUTHRIE, the inventor of this instrument, is one of the Surgeons of the "Royal Westminster Infirmary for the cure of Diseases of the Eye." In the second edition of his valuable Lectures on the operative Surgery of the eye, published at London in 1827, he describes the instrument with its application and advantages, in the following words:

"In order to avoid some of the difficulties attendant on the division of the cornea, Dr. F. Jager, of Vienna,* has proposed a double knife, one rather smaller than the other, attached by a button screw, yet capable of sliding upon it by pressure with the thumb, for the purpose of completing the incision of the cornea, when the punctuation is completed by the larger and lower one. It is to be introduced in the same way as Beer's knife, not parallel, but nearly perpendicular to the cornea; and afterwards carried across the eye, exactly like the single knife, with the blunt edge, or back, following an ideal line drawn directly from one side to the other, and with the external side of the fixed blade parallel to the iris, at the usual distance from the junction of the cornea with the sclerotica. When the point of the greater knife has transfixed the cornea at the inner side, pressure is to be made on the button head with the thumb; the smaller knife is, in consequence of the pressure, pushed forward, while the greater keeps the eye steady, until the operation is finished. A needle is then introduced to lacerate the capsule, and the opera-

*See Loudon's Short Inquiry into the Principal Causes of the Unsuccessful Termination of Extraction by the Cornea. London, 1826.

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tion concluded by gentle pressure on the ball, if necessary, to displace the lens from its situation.

"In employing the double knife, we may use it as we would a Beer's knife. After the counter-punctuation is made, we have a support for the ball in the greater knife, while the cut is performed by the smaller. There is no necessity for dragging forward the eye to enable the operator to complete the incision."

The advantages above described, have not all been observed in the trials I have made with the instrument, and I suspect they will be found to be more specious than real. I am not, however, as yet competent to give a decided opinion either for or against the affirmative one of Jager, or of our author, Mr. Loudon.

In denying, however, to this instrument, the merit which has been attributed to it, I am willing to concede that of its being the foundation for the construction of another, which I believe to be more perfect—to be capable not only of preventing nearly all the difficulties and dangers which occur in the extraction of the cataract, but of obviating them when they have occurred, either from accident, or any defect in the operator. It is a double instrument, one part being a cataract knife of the shape of Wenzel's, the other a silver blade of the same form, but larger and blunt. (See Plate.) The sharp steel knife is attached to the silver blade by a button screw in the handle, which admits of the knife being pressed forward in the same manner as Jager's; whilst it is so nicely and closely fitted to the silver blade as to form one instrument, neither the point nor the edge catching when the finger is pressed along it. An opening is to be first made in the cornea, with a common large Wenzel's knife (which I prefer to Beer's;) and of such a size as to admit the double instrument, being the first step of the punctuation: the knife being withdrawn the aqueous humour escapes, and the iris is pressed forwards against the cornea, the eyelid being allowed to fall over it. If any protrusion of the iris should take place at the opening in the cornea, the protruded part will return to its place on gently rubbing the eyelid with a silk handkerchief, a piece of sponge or the finger. The eyelid is now to be raised, and the double instrument introduced at the opening, the silver blade being next the iris. The silver point being larger than the steel one, easily raises the cornea and presses back the iris; so that by alternately raising and depressing the point of the instrument, it is readily carried across the eye in front of the iris and pupil, until the silver point touches the inside of the cornea, either immediately opposite the point of entrance, or as much above or below as the operator may think fit. The thumb, which has hitherto been resting on or near the button screw, is now made to press it forward, and to protrude in consequence the sharp steel blade through the cornea, when the instrument readily cuts its way out, and completes the section of the cornea.

The principle on which this instrument is used is diametrically opposed to all others. The great object of Wenzel, Beer, and Jager, and of all operators, is to prevent the evacuation of the aqueous

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humour, until the knife has passed across the eye through the cornea at the opposite side, and has begun to cut its way downwards. The great object of this method is to evacuate the aqueous humour, as a preliminary step to the operation, and to bring the eye to that state which renders the operation recommended by those surgeons impracticable. The great difficulty they have to encounter is the falling forward of the edge of the iris, at the moment the aqueous humour is evacuated, and the necessity which then arises for bringing the knife out before the incision is completed, or of wounding the iris. It is true, rubbing the cornea, as directed by Wenzel, will sometimes cause the iris to move from before the edge of the knife, but this is only when the punctuation has been well made; for it will not always do it, and the knife must then be withdrawn, and the incision completed with the scissors or blunt-pointed knife, the edge of which often injures the iris, and always cuts with difficulty; so that three or four cuts will be required, leaving the general edge of the cornea uneven and indisposed to adhesion. In my operation, the double instrument not being introduced until the eye is quiet after the first attempt made upon it, the iris has little disposition to fall forward, as it is termed, or turn upon the edge of the knife, because this movement of the iris is caused by the evacuation of the aqueous humour; and when it is disposed to do so from other causes, it is prevented by the blunt or silver blade, which keeps it back in its place. The unsteadiness of the patient's eye only delays, but does not otherwise interfere with the success of the operation, neither does the toughness of the cornea, both of which are often serious impediments in the usual method of extraction, as preventing the perfecting of the incision by a single introduction of the knife, and rendering the use of the round-pointed knife necessary to enlarge the opening to a sufficient size for the passage of the lens through it. In the common method of operating it is dangerous to complete the operation by one incision, on account of the spasmodic action of the muscles, which often expels the lens and vitreous humour with great violence. By my method, this sudden spasmodic action has had time to subside, with the evacuation of the aqueous humour, by the formation of the first opening, and subsequent falling of the lid, and the operation may therefore be completed at once with little or none of this danger. Upon the whole, I consider that this instrument simplifies the operation in a remarkable manner, and renders one of the most difficult operations in surgery, one of very easy performance." pp. 343—346.

The following plate, copied, with some slight alterations, from Mr. Guthrie's book, exhibits his knife, under three different aspects.

Figure first shows both blades;—the steel or cutting blade pointed, resembling a Wenzel knife, and included within the

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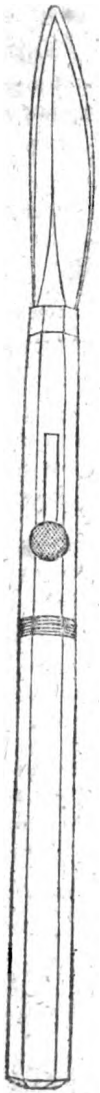

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contour of the silver blade or guard, which is obtuse, at the point and edges, and lies underneath. This is the knife for the right eye, and the blades have the relative position, which is proper when they are to be introduced into the eye. Figure second exhibits the cutting blade of the same side, detached. The hole in the shank receives the screw point of the knob, which is represented below. Figure third shows the knife for the left eye; with the cutting-blade projected, as it is, at the time when the section of the cornea is completed. The silver blade in this figure is underneath.

Soon after Mr. Guthrie's book reached the United States, I requested Dr. Hays, of the Eye Infirmary, at Philadelphia, to put it into the hands of one of the ingenious cutlers of that city, Mr. Rohrer, and have two sets of these instruments made for me, which was obligingly done; and one of the objects of this paper is to state the results of my trials with them.

Appropriating one set to operations on the eyes of dead animals, I used it a number of times, and have since operated with the other on three patients of the Cincinnati Eye Infirmary.

From the language of the ingenious inventor, it could scarcely be supposed that the least difficulty would attend the use of this knife, and in his experienced hand, this may, perhaps, be the case; but considered as an *instrument which simplifies the operation in a remarkable manner, and renders one of the most difficult operations in surgery, one of very easy performance;* in other words, as an invention which so far obviates the the difficulties attendant on the ordinary operation, as to enable the inexperienced to perform it with facility, safety and success, its claims on our confidence are not unqualified.

I. The first difficulty attendant on its use, is that of making, with a common Wenzel knife, as Mr. G. directs, an incision sufficiently large to permit the double knife to cross the disk of the iris; but if this be not done, the operation cannot be successful. When the Wenzel knife is introduced no further than the centre, or inner edge of the pupil, the aperture will be too small to admit the Guthrie-knife; and, if, to increase

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the dimensions of the incision, the Wenzel knife be made to traverse the iris, the operation might, in general, be safely completed without withdrawing that instrument: in other words without Mr. Guthrie's knife. Those, therefore, who are about to use his knife, should do one of three things, in reference to this difficulty. 1. In withdrawing the Wenzel knife, the handle should be rotated on the point, by which the cornea will be cut to a greater extent, than by the mere puncture; but as the aqueous humour will begin to escape, as soon as the rotation commences, this method may not be without its dangers to the iris. 2. After withdrawing the knife, one of Mr. Guthrie's silver guards (the cutting blade being detached) may be introduced; and, while the iris is thus protected, the cornea, may be cut, by successive strokes with an iris knife. This operation is safe, but tedious; and renders the lips of the wound more or less irregular. 3. Instead of using the Wenzel knife, one much less tapering might be made; which from its great breath would make a sufficient incision by the time the point had reached the outer margin of the pupil. I perceive no difficulty either in the construction or use of such a knife; and, it would effectually obviate one of the greatest objections to the new instrument.

II. Having succeeded in introducing the Guthrie-knife, the inexperienced hand encounters a new difficulty, which nothing but practice can surmount. While the silver blade is pressed forward and kept firmly in its position, across the anterior chamber, the cutting blade is to be projected. In doing this the silver blade has a tendency to recede; and without proper care we shall move it backwards, instead of moving the other forwards. If the first incision should not have been sufficient, to permit the point of the silver guard to reach the cornea, on the opposite side, this recession will almost inevitably occur. It can only be prevented by pressing the point of the guard against the cornea, where the second puncture is to be made, sustaining that part by the middle finger of the left hand; placed over the caruncula lachrymalis. In this manner the guard may be kept firmly and steadily in its place, while the cutting blade passes across

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the eye, and pierces the cornea on the inner side. If on introducing the instrument, the preparatory incision should be found to be too small, it should be withdrawn, and the cut made larger, with the scissors, or preferably, in the manner pointed out above; and the operator should not attempt to enlarge it by projecting the cutting blade, and at the same time moving the guard across the eye. The two motions, with the same fingers, could not be performed with success. Hence, as it respects the whole operation, the great importance of a free initial puncture.

III. When the muscles of the orbit are prone to convulsive action, the eye ball cannot be kept from rolling, without a degree of pressure, that causes more or less *prolapsus iridis*, at the moment when we attempt to introduce the double knife. I am aware that in cases of spasmodic action, the vitreous humour is liable, under the old method, to be thrown out, and that Mr. Guthrie's method will diminish that liability; but in doing this, it evidently, produces a different difficulty, that which I have named, and in some cases this may be more momentous than the one which it obviates.

IV. The passage of the instrument between the cornea and iris, both relaxed and quite in contact, is not without its difficulties; for each of them, in turn, is disposed to catch and wrinkle on the silver point, and the latter to float around the obtuse edges of that blade, so as even to be in danger of injury from the steel knife.

V. The thickness of the silver blade, if it be so strong as not to bend, is such, that if the first incision be not made extremely near to the sclerotica, the cut of the steel blade, will be so far towards the apex of the cornea, that the central part of the eschar may, to a certain degree, interfere with the vision of the patient.

VI. After the perfect evacuation of the aqueous humour, from both chambers of the eye, through the initial incision, and the consequent collapse and relaxation of the cornea, that membrane probably becomes tougher, and more difficult to cut; so that the remainder of the incision cannot be executed with the same facility, as in the ordinary operation.

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I have used Mr. Guthrie's knife three times. The first case terminated unfortunately. I will state the manner, as it involves several of the difficulties which I have pointed out; and may possibly be the means of preventing a similar result, in the first trials which other operators may make with his instrument.

The patient, a lad 14 years old, laboured under congenital cataract. I had operated on him according to Mr. Sanders' method and found the body of the lens unabsorbed and soft. Immediately after the operation it suffered the usual increase of opacity, and induration. At the end of several weeks it had undergone no perceptible dissolution, and a portion of it appeared to plug up the pupil. As the eye was well formed, the operation of extraction seemed quite practicable, and I determined on using Mr. Guthrie's knife. The initial cut was made with a large Wenzel knife, introduced until the point was near the nasal edge of the pupil. On withdrawing that instrument and attempting to insert the Double knife, I found the spasmodic action of the muscles of the globe (as is usual in congenital cataract) so considerable, as to require more than the ordinary pressure to keep it steady; and this pressure united with that of the convulsed muscles, protruded the iris into the incision, and against the cornea to such a degree, as rendered this part of the operation exceedingly difficult. By gentle efforts, however, the instrument was insinuated, without injury to the iris, as far as the Wenzel knife had been inserted, when the puncture would not suffer it to advance. I had then either to withdraw it and enlarge the incision, or to attempt its enlargement, by projecting the steel blade. As the tendency to a protrusion of the iris was so considerable as to give the appearance of difficulty in executing the former, I decided on performing the latter. I accordingly attempted to project the cutting blade, and as fast as it should enlarge the opening to push forward the silver guard; but from the unsteadiness of the globe, and the complex movements required from the same fingers; the cutting blade instead of traversing the cornea, at that time closely in contact with it, pierced that membrane a little be-

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low its centre, and cut its way out. Thus, instead, of a semicircular cut, extending half round the cornea, parallel to its margin, I had a curved incision, commencing at the usual point, and terminating in front of the lower part of the pupil. Thro' this incision the lens was discharged without violence. It was followed by a moderate portion of the vitreous humour. The wound healed, and the anterior chamber was properly replenished; but the eschar as might have been expected renders the cornea opake in the centre, and prevents the admission of light. I now believe, that had I withdrawn the double knife, and enlarged the aperture, in the manner, which I afterwards adopted, the result might have been favourable.

The subject of the next case was a man 50 years of age, whose eye was was steady. The initial puncture was made as before, and enlarged as follows—detaching the steel from the silver blade of another Guthrie-knife, I introduced the latter; and used it at once as a defence to the iris, and a director, for a small scalpel, with which I continued the incision, until it would freely admit the double bladed knife. This I then passed, without much difficulty, across the anterior chamber; and pressing the point against the cornea of the opposite side, supported by a finger of the left hand, I completed the incision without difficulty, and the case terminated favourably.

The subject of the third operation was a young man. Having to operate on the right eye, I determined to make the incision upwards. The cornea was punctured as before, but from the great tendency of the globe of the eye to role upwards I found it quite impossible to enlarge the aperture in that direction, and was obliged to operate downwards. From the unsteadiness of the eye, the lengthening of the cut was a slow operation, but I at length succeeded, and was enabled to push the double knife across the eye, and finish the operation without accident.

In both these cases, the incision was further from the junction of the cornea and sclerotica than is desirable, in consequence of the thickness of the silver blade; and I am disposed to think that an iron blade, which might be made much thinner, without bending, would be preferable.

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From this review of the difficulties connected with the practical application of Mr. Guthrie's knife, I am compelled, to believe, that its value is less than he has supposed. It must be recollected that he offers it as a substitute for the knives of Beer and Wenzel, on the ground of its simplicity and safety. His recommendation, in fact, amounts to this, that while repeated trials, many of them disastrous to the eye on which they are made, have been found indispensable to a competent degree of skill in the old method; the new one is so easy, as to render long experience unnecessary to a successful result. But, although intrinsically a valuable method, I am disposed to think that a course of practice, little short of that which would make the operator familiar with the old method, is absolutely necessary to any tolerable perfection in the new.

After all, however, Mr. Guthrie's knife is not without its advantages. Whenever, from any cause, the further introduction of the common cataract knife would endanger the iris, and its withdrawal lead to a failure in the operation, Mr. Guthrie's knife offers an admirable resource; and cases of this kind may frequently occur. But its value when the muscles of the eye are powerfully convulsed, is more disputable, on account of the pressure of the iris against the wound in the cornea. It may tend to preserve the vitreous humour, but in the attempt to introduce it under such circumstances, there is danger of injuring the iris. On the whole it seems to me, that Mr. G. has overlooked the objections to his method—no uncommon thing in men of inventive genius, and sanguine anticipations.

In concluding I may say a word on the means of preserving his knife from oxidation. Whenever two metals of different degrees of oxidability are suffered to remain nearly in contact, with a fluid between them, a galvanic process is set up, and one of them will rust. Thus when the steel blade of the Guthrie knife is oiled and suffered to remain in connexion with the silver guard, it becomes speedily oxidated, as I have experienced; the two blades should, therefore, be kept asunder with cotton or soft paper.

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ART. II. *Practical observations on the Uterine Hæmorrhage, connected with Abortion and Parturition.* BY THE EDITOR.

Few subjects have engaged the attention of Obstetricians, more than Uterine hœmorrhage. Without claiming to have had any uncommon share of obstetrical practice, I may say that, in attendance on many hundred patients, belonging to that department of the profession, I have been presented with almost every kind and degree of uterine hœmorrhage, and have not, in the course of more than 20 years practice, lost a single patient with that formidable malady. Was this result ascribable to new views of the pathology of that affection and a new mode of practice, it would certainly be proper to report them. I have relied, however, on remedies generally known to the profession. Ought I then to consume the time of the readers of this journal, by setting forth the plan which I have followed? I see no objection to such a publication; inasmuch as it can scarcely fail to be useful, for practitioners, occasionally, to draw monographs of their practice, even in maladies the most curable. I shall state what I have to say under three distinct heads—Prevention, Suppression and Restoration.

I. OF PREVENTION.

1. When uterine hœmorrhage is expected, either, at the proper time of parturition, or before, much may be done to avert it. If the patient be of a sanguine temperament and full habit, blood-letting is indispensable; and in proportion to the extent to which it is carried, will the danger of hœmorrhage be diminished. There are, however, feeble and dyspectic constitutions, in which a resort to this preventive remedy, would be unavailing, and, indeed, prejudicial. In such constitutions, an indiscriminate use of the lancet, in the period of utero gestation, is altogether improper, and has often produced abortion.

2. Another prophylactic is purging, which, by weakening the action of the heart, diminishes the impulse into the uterine arteries; and by promoting secretion and peristaltic action, in the bowels, seems to lessen the determination to the uterus.

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3. A third and most powerful means of prevention, is the liberal administration of opium or laudanum. This should follow the blood-letting and purging, when those remedies are employed. The quantity given, should be great enough to exert a crippling influence on the circulatory system, which, in vigorous constitutions, cannot be easily affected, if venesection be not premised. The power of the narcotic over a hœmorrhagic tendency is so great, that when there is no particular degree of plethora, I feel little apprehension for any patient, after being brought under their influence.

4. A recumbent posture, a hard bed and warm feet are all requisite; but can, by no means, be relied on to prevent hœmorrhage, where the tendency to it is very great. I cannot, however, too strongly insist on the necessity of perfect rest and physical and moral quiet, immediately after delivery. Many a patient has been brought into a most reduced state, simply by a neglect of those precautions.

II. Of Suppression.

1. When uterine hœmorrhage begins, whatever may have been the vigour of the circulation, it is speedily brought below the standard of health. Venesection, therefore, however valuable, as a means of prevention, is wholly inadmissible as a means of cure, except in the earliest stages.

2. But the same remark does not apply to opium, which I have found adapted to every stage of this *profluvium*. The quantity required is sometimes very great; and if it be not thus administered, but little benefit will result from its use. Two or three grains of solid opium, or a large tea-spoon full of strong laudanum, may be given at a single portion, and repeated once or twice, according to circumstances. Twenty or thirty years ago, the union of acetate of lead, and ipecacuanha, with opium, was strongly recommended, by several practitioners, especially the late professor Barton. I have often resorted to the combination; but am by no means satisfied of its superiority over uncombined opium. When employed at all, it should be in the early stages, when the sedative power of the two adjuvants may exert a favorable influence over the action of the heart and arteries. In exhausted

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states of the system, this influence is not beneficial, nor, even, safe.

3. The abdominal bandage, immediately after delivery, should never be neglected, when hœmorrhage is threatened. It may be promptly applied, in a temporary way, over the clothes of the patient, and readjusted after some hours. By compressing the uterus between the *parietes abdominis*, and the contained viscera, it contributes powerfully to promote the tonic contractions of that organ, so essential to the suppression of hœmorrhage.

I have heard fears expressed, that a tight bandage, immediately after parturition, might do harm; but such apprehensions are groundless. It is only the unskilful application of it that can do injury. As too often applied, it is a mere cord drawn around the patient, over the hypochondriac and epigastric regions. Such a ligature interferes with the action of the diaphragm, and by its pressure on the scrobiculus cordis, inevitably distresses the patient, while it is far from fulfilling the intention with which it is employed. The bandage should be broad and firm, and passed over the iliac, hypogastric and umbilical regions; and ought to be drawn so tight, especially below, as to compress the viscera firmly against each other, for on this all its efficacy depends. Now this compression is attended with three excellent effects: First, it maintains the excitement of the heart and brain; and, in bad cases, prevents syncope:—Secondly, it prevents or restrains hœmorrhage:—And, thirdly, it facilitates the separation and discharge of the placenta. To promote the last object, it is common to direct the patient to make long inspirations and expirations, and to employ frictions over the region of the uterus; but the former do far more good with, than without the bandage; and the latter are, in almost every respect, inferior to it. To its influence, chiefly, I ascribe the fact, that I have never yet, in my own practice, been obliged to introduce my hand into the uterus for the purpose of separating the placenta from its attachment.

In speaking of the safety of the tight bandage, it will be understood, that I refer to the period immediately after deli-

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very; which is, in reality, the only one that imperiously requires it. At a subsequent time, when the circumstances that favor hæmorrhage no longer exist, and the sensibility of the abdominal parieties and the contained viscera, has become exalted; the tight bandage would be injurious, and is, in reference to the objects for which it was applied, quite unnecessary.

4. Cool air and cold topical applications, are of great moment; but too much reliance should not be placed on them. as long as the heart and arteries retain a considerable degree of vigour, they are highly beneficial; but in states of the system greatly reduced, if too liberally applied, they may do harm; and in every stage, it is important to preserve the temperature of the lower extremities. The injection of cold water into the cavity of the uterus, might, undoubtedly, be resorted to, in desperate cases, with success, though subsequent hysteritis might sometimes, perhaps, ensue.

5. The Tampon is a remedy, which may often produce the most salutary effects. Of the propriety of a resort to this instrument, in cases of early abortion, there can be no difference of opinion; as the uterine cavity is then, in general, so small, that it may be filled with coagula, before the patient would suffer any alarming reduction of strength. There are many practitioners, however, who condemn a resort to it, after ordinary parturition. But even then, it does good, though it should not be relied upon to the neglect of other means. That it may prevent the external discharge, while the large uterine cavity is filling with blood, no one can deny; but this need not operate to the disadvantage of the patient, unless the practitioner takes it for granted, that there is no discharge *into* the uterus, because he has prevented a discharge *from* it. He should look well to the state of the circulation, and, also, to the animal functions generally; and if he finds them failing, he will stand in little need of a vaginal discharge, to apprize him of the continued existence of hæmorrhage. Now, in such a case, will it be diminished, by withdrawing the Tampon, and suffering the blood to flow out uncoagulated? I answer that it will not; but the reverse must happen. For

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if a coagulum, produced by the restraining influence of the Tampon, in the early periods of gestation, can moderate the hœmorrhage, it is equally true, that it can do the same thing, after delivery, at the full period. I would, therefore, promote the formation and retention of coagula, within the uterine cavity; and rely upon their contact with the bleeding surface, pressed against them by the action of the external bandage, to moderate the discharge. At the same time, I would resort to every other remedy, as if the Tampon had not been employed. It is only objectionable, when it is made our exclusive reliance.

6. Few cases, in the profession, offer such alarming indications of exhaustion and debility, as the hœmorrhages which we are considering. And, what is more appalling, the discharge may continue, notwithstanding the powers of the heart are extremely reduced. Under such circumstances, internal and external stimulation, is of the utmost importance. To effect the former, brandy, whiskey, ammoniated alcohol, tincture of camphor, and other excitants, united with laudanum, may be administered freely; but the stomach is sometimes irritable, and oftener torpid, so that we shall, frequently, be disappointed in our attempts to sustain the sinking energies of the patient, by internal excitants. In these cases, the pulse becomes exceedingly feeble and empty, the respiration embarrassed, the surface pale, cool and sweaty, and the feet cold; but above all, there occurs an epigastric anguish, which suggests to the patient that death is approaching. Now, in this extremity, as well as in the approach to it, I am convinced that nothing is equal to external stimulation, with mustard. It not only arrests the declining powers of the system, but restrains the hœmorrhage, which is exhausting the patient. I feel quite certain, that I have saved the lives of several patients, by a resort to sinapisms. As no time is to be lost in these cases, the physician should, in general, take upon himself their preparation; and in the first place, the mustard which he uses, ought to be good. He should prefer the unpulverized seed, which may be crushed, for the occasion, and will be free from the ordinary adulterations.

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Secondly, it should be mixed up with boiling water or vinegar, and used as hot as the patient can bear it. Thirdly, the napisms, thus prepared, should be applied, of a large size, to the epigastrium, and to the lower and inner sides of the legs. In extreme cases, when the feet are cold and insensible, we can only rely upon epigastric irritation; and its animating influence on the various functions, is, in all respects, admirable. The pulse rises in its volume, power and regularity; or, if entirely suspended, which occasionally happens, it is rendered perceptible; the death-like sensation of sinking and of syncope, is removed; and the hœmorrhage moderated. In such cases, it will not answer to rely upon applications to the lower extremities; for in their state of coldness and insensibility, the mustard will not act upon them, in due time. It is proper, however, to apply them, that when the epigastric sinapism may have revived the susceptibility of the surface generally, the returning excitement may be augmented and sustained by their action. When they excite pungent pain, and the patient becomes restive, under their impress, they may be removed; but in phlegmatic temperaments, their reapplication will often be necessary.

By these means, varied and combined, according to circumstances, I have had more success in the treatment of uterine hœmorrhages, than I have been so fortunate as to experience, from other agents in the treatment of any other dangerous disease; and am disposed, therefore, to think highly of them. In their application, I have laid the greatest stress on opium, the tight bandage, and sinapisms; and if, in my relative estimate of the value of our different resources, I have differed, in any degree from others, whose practice I have known, it has been in pressing *these* measures with greater energy; and placing less reliance upon cold vinegar, cool air, sugar of lead, and warm irons to the feet.

After every copious uterine hœmorrhage, there succeeds a period of feverish excitement, with head-ache, and morbid vigilance. The proper remedy for this condition, is alvine evacuation; which may be effected either by enemata or a cathartic. The young practitioner is often apprehensive,

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however, that purging may reproduce the hœmorrhage; but of this there is no danger. He need not, therefore, suffer his patient to linger under these symptoms; but resort to the means, of which I have spoken, at an early period. They will not only afford great relief from those symptoms; but contribute equally to an abatement of the after pains, which, frequently, prove so obstinate, under the narcotic treatment. This is particularly true of emollient enemata, which will, in general, give more relief from that painful affection, than any other remedy, at present known to the profession.

III. Of Restoration.

The recovery from copious uterine hœmorrhage, especially that connected with abortion, is generally tedious. The digestive, indeed, the nutritive organs generally, fall into torpor and depraved action. In fact, the great functions of circulation and innervation, are left more or less reduced and perverted; and their restoration is not easily effected. Stimulants, tonics, and nutrients are the means; but under an undiscerning and indiscriminate administration, it is far from being certain, that they will succeed to the satisfaction either of the patient or physician. They must be so administered, that the former do not excite headache or epigastric heat; nor the latter, acidity of the stomach. It is necessary, in short, to look diligently to the state of the great secretions, especially those of the liver, intestines, kidneys and skin. Some one or more of these will generally be found in a state of bad health, and must be treated with appropriate stimuli. Hence, it is necessary, while administering general stimulants, to employ those, also, which act upon particular organs. Thus, the secretion of bile must be maintained by the pil. hydrargyri and aloes, formed into pills with extract of gentian. Intestinal secretion and excretion, must be promoted by the same composition; by small doses of cinchona bark and jalap; or an infusion of senna, with bitters and aromatics, to which the carbonated alkalies or magnesia, may be advantageously added. The stomach must be regulated in its susceptibilities by an occasional emetic of ipecacuanha, from which the best effects will often result. The urinary secre-

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tion, when deficient, must be promoted, by stimulating diuretics. Lastly, the functions of the skin should be maintained by frictions, flannel, exercise, and the cold or warm bath. If we thus attend to the state of the secretions and excretions, our patients, debilitated by copious hœmorrhage, will seldom experience inconvenience from the most active stimulation, while its restorative influence will be decided.

There are too morbid states connected with, or rather making part of, that now under consideration, which frequently cause great suffering to the patient, and trouble to the physician;—I allude to hysteria, and prolapsus uteri with leucorrhœa. They are very commonly united. In patients of a sanguine and vigorous temperament, they, in general, yield promptly, to the treatment of which I have spoken; but such are not their usual subjects; and, attacking, chiefly, those of a phlegmatic or nervous constitution, they are apt to prove obstinate. It is not my intention to dwell upon the treatment of these symptoms; for, in fact, I know of little that can be done, save that which has been recommended. I may refer, however, to the speedy exhaustion, which the susceptibility of the system suffers, under the diffusible stimulants, which are usually employed in these cases. Thus the antispasmodic, which, to-day, afforded great tranquility to the nervous system, may entirely fail to-morrow; when another prescription will be necessary. It is not indispensable, however, to resort to *different* medicines, every time we prescribe anew, for when we employ composite recipies (which, in general, are most successful in these cases) a mere change in the proportion of their ingredients, will frequently answer the end in view.

As to the local treatment of the uterine system, I am by no means convinced, that it affords much relief. Astringent injections sometimes do good, but their effects are far too limited: From pessaries, I have seen still less benefit, and they give the patient more trouble, than injections. A pelvic cold bath is serviceable, if persevered in. Frictions and pharmaceutic stimulants over the sacral portion of the spiral column, are useful. A recumbent position on a mattrass or

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straw bed, is, in all bad cases, quite indispensable; when the patient is not engaged in taking exercise. Walking is prejudicial, but our chief reliance should be on carriage and horse riding. The patient will often resist the proposal to go abroad, on the ground of being too weak. But the physician must decide; and he should not be backward in urging that, which, in the majority of cases, will contribute more to allay nervous irritation and restore tone, both general and local, than the whole materia medica.

I shall conclude this series of practical remarks, (extended much beyond the limits which I expected them to reach) by a reference to the injury, which, occasionally, happens to patients labouring under nervous irritation with chronic debility, from too much professional officiousness. Now and then we meet with cases, in which our choicest stimulants and tonics, however combined and administered, serve but to increase the inquietude and exhaust the strength of our patients. At the same time, there will be great apprehension of danger and perpetual calls upon us, for new and more energetic prescriptions. Under such circumstances, it is the duty of the physician to resist all importunity, and withhold all active medicines. This determination will excite new alarm; but in most cases it will be transient, and within a few days, the condition of the patient will, in all respects, be sensibly improved. During such a period, he should continue his visits, and avail himself of all the aid which can be drawn from moral influences. There is a time to withhold medicines, as well as a time to give them.

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Art. III. *Observations on Fractures of the Patella.* By Charles Bell, F. R. S. *As delivered by him in his Clinical Lectures.*

[From the London Medical Gazette.]

Gentlemen,—The cases to which I shall first direct your attention, are instances of fracture of the patella, now in the hospital; and although they are related briefly, they contain illustrations of important practical doctrines; indeed, they guide us to the principles of our treatment in all cases of fracture.

First case. Mary Langthrone, aged 46, was admitted into the females' accident ward, August 23d. Whilst she was at work in the kitchen, she heard her mistress call her, and as she was running up stairs, her foot slipped from one of the steps, and she fell. She is not certain whether her knee struck against the step. She was unable to raise herself up, and when her master lifted her, she discovered that her lameness was occasioned by her kneepan being broken. When brought to the hospital, there was no appearance, on the integuments of the part, as if it had been struck or bruised. The patella was fractured transversely, and tumefaction of the joint arose soon after her admission. During the first week, attention was paid to the position of the limb and body. She was propped up in bed to bring forward the origin of the rectus muscle; the limb was extended to relax the ligament of the patella; and cold lotions were applied. When the knee was in a state to admit of the fracture being set permanently, it was done in the following way:—The limb was in the first place rolled from the ancle to the middle of the thigh; compresses were then placed above the upper portion of the patella, and below the lower portion; straps, made of portions of bandage, were laid along each side of the knee, one on the inside and another on the outside. A second bandage was now applied over the compresses and the straps; it was passed over the central parts only of the latter, and the ends were left loose. These extremities of the longitudinal straps were tied closely together on each side of the knee-joint: in this manner the folds of the roller and the compresses were approximated towards the centre of the knee; and the two fractured portions of the patella were thus brought close together.

Oct. 20.—It is now about eight weeks since the accident, and the bone is united, but, it is feared, by ligament, although there is scarcely any perceptible distance intervening between the two portions. She has attempted to walk about the ward, but finds the limb very weak, and being timid, she seldom ventures to rise from her bed.

Second case. David Keith, aged 36, a bricklayer, was brought to the hospital, Sept. 15th, in a state of intoxication, having received an injury on the knee. Little credit can be given to the account which he himself afterwards gave of the manner in which the accident occurred; but it appears from the statement of those who were with him, that his foot slipped upon the curb-stone, so that he fell

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with his whole weight on his left knee, which struck upon the iron grating of a sewer. When brought to the hospital, there was great ecchymosis over the whole front of the knee-joint; and the patella was discovered to be broken into three portions. There appeared to be a transverse fracture separating two upper and lower pieces, while a lateral portion was broken off longitudinally, and was found lodged on the inside of the condyle of the femur. This last-mentioned portion was replaced in its proper situation close to the other two. He was placed in a sitting position in bed, with orders to keep his limb constantly in a state of extension. When he became fatigued with sitting erect, he was allowed to recline backwards, but care was taken to elevate the limb upon pillows, so that the knee approached the pelvis, and the rectus muscle was relaxed. Seventeen leeches were applied to the joint, and afterwards cold spirituous lotions were kept constantly upon the parts, until the active inflammation was subdued. A bandage was applied to the limb, but as it gave pain, it was immediately taken off. When the inflammation had ceased, the knee was bandaged.

October 25th.—The union is so complete, that there is great difficulty in distinguishing where the bone was fractured. The skin which covers the patella being no longer thickened or condensed, but in its natural condition, the whole surface of the patella is found to be uniform; no indentation can be detected, to mark any deficiency of solid bony union: there is a slightly elevated ridge of bone extending transversely, which points out the situation of one of the fractures. He has been walking about the ward for some days, and is to leave the hospital to-morrow.

These two cases serve to illustrate a distinction in the kinds of fracture of the patella, which it is of the greatest consequence the practitioner should understand. In the first it was not clearly made out, from the statement of the patient, how the accident took place. For it may be a question whether the patella was fractured by the convulsive action of the muscles while she was endeavoring to save herself from falling, or whether on falling she struck the patella against the edge of one of the steps, and thus fractured it, independently of the action of the muscles. It appears, however, that the first supposition is most probable: since there was no mark of any bruise upon the integuments of the knee, and there was very inconsiderable swelling of the joint consequent on the injury.

In the second case, even although we had not the statement of the person who saw the accident, there was evidence of great injury having been inflicted. The bone was fractured into three portions. This proved that it was not by the simple tearing and snapping of the bone by the action of the muscles, that the accident occurred. Besides, there was great ecchymosis, with swelling and heat of the joint for some time. It appears, then, that the patella in the last instance was fractured by the patient's tripping upon the edge of the curb-stone, and falling upon the knee with his whole weight against

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the iron spokes of the grating. This accident, besides fracturing the patella, it is to be observed, produced great injury to the surrounding structures.

We shall consider these cases separately, for it is important that we should understand clearly the distinctions between them. In the first place, we shall attend to that fracture of the patella, which is occasioned by the convulsive action of the extensor muscles of the limb, in which little injury is done to the parts around the joint: and then we shall contrast it with another kind of fracture of the patella produced by a direct blow upon the bone, by which it is splintered against the heads of the femur and tibia; as, for example, when a person receives a kick from a horse, or falls from a great height upon his knee. I remember it happening thus:—A coachman in the act of pulling up his horses, broke the foot-board on which he pressed with his whole weight, and fell from his box. In his fall he struck his knee against the roller bolt, and fractured the patella into several portions. In such a case there is not only a fracture of the patella, but there is also a violent injury of the joint combined with it, and the importance of the distinction is evident from this,—the treatment, which if pursued in the one case may be perfectly proper and successful, if followed in the other may be attended with the loss of life. But there is, besides, another reason; there is a prospect in the one case of the broken portions being united, merely by means of ligament, while we may expect in the other, by proper management, to procure union by bone.

In the common fracture of the patella, we observe an appearance of unnatural flatness, and squareness of the fore part of the knee, which is very peculiar and characteristic of this injury; when once it has been observed, the appearance can scarcely in future be mistaken. This squareness is occasioned by there being certain points of bone brought nearly upon the same level; the patella being transversely divided, its upper portion is drawn away from the lower, and thus the usual prominence in the centre of the knee is destroyed; the fractured portions, now occupying the upper and lower parts of the joint, appear as projections there, while the two condyles of the femur jut out on each side unnaturally, and a square flat surface is produced, bounded by these projections of bone. In placing the hand upon the knee, the four knobs of bone which constitute this peculiar squareness can be felt, and the sensation conveyed makes it quite clear what the nature of the accident is.

This kind of fracture of the patella is most frequently caused by the person stumbling, and then making a violent effort to recover his balance. He suddenly brings the quadriceps extensor into powerful exertion, and the force of this muscle may be imagined, when we consider that it is capable of throwing up the whole body as in a leap: it is this muscle too which straightens and then fixes the limb, when we rise up under a heavy load placed upon the shoulders. We can, therefore, imagine, that in making a violent convulsive effort,

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when the body is thrown off its centre of gravity, this muscle may act with force sufficient to rend the patella asunder. But there is another circumstance which renders the liability to fracture greater; there is a certain degree of flexion of the knee-joint, during which the patella is more easily broken. About the middle state between extreme flexion and extension of the limb, the patella rests with its upper half upon the convex surface of the femur, while that part of the bone to which the ligament of the patella is attached, projects without support over the space left between the separating surfaces of the femur and tibia. If the knee-joint be further bent, and the quadriceps muscle be in a state of spasmodic contraction, thus retaining the patella fixed upon the end of the femur,—and if the ligament of the patella be acting in an angular direction upon the projecting part, the bone is then snapped, as it were a stick broken across the knee.

Sometimes in cases of fracture of the patella, which take place in this way, we find there is a confusion in the statement of the patient. When asked how it happened, he is at a loss to make out whether the bone was broken before he fell to the ground, or whether his fall caused the fracture. But it is not unfrequent that intelligent patients, of their own accord, state distinctly that they heard a snap at the knee-joint when they were making a violent exertion, and immediately after that they found they were lame, the knee sinking under them. It is a remarkable circumstance attending this accident, that when a patient has once suffered from it, he is very liable to have the patella of the other knee fractured. Now it is quite unnecessary to attribute this to the patella of such a patient being of a very brittle texture,—an explanation that has been offered. This is exceedingly unsatisfactory, and we may explain the circumstance on another principle, namely, the lameness and inperfection of the limb consequent upon the previous injury. In all probability, when the fractured patella has united, there has been a considerable space intervening between the portions, and the interval has been filled up with ligamentous substance. This, it may be perceived, is but a poor substitute for the perfect structure of the patella: the office of the patella is nearly destroyed, for the ligamentous part plays upon the surface of the femur, nearer the centre of motion, and, consequently, the muscles lose somewhat of their lever power. The individual is, therefore, apt to trip frequently, and, consequently, he is very often called upon to make those violent exertions to save himself from falling, which it has been shown are the most likely to endanger the patella. It is thus he incurs the risk of rupturing the patella of the sound limb from having already had a fracture of the other. It is not improbable, however, that there may also be some peculiarity in the form of the projecting part of the patella, which may render its fracture more likely to occur in some persons rather than in others.*

* We have heard Mr. Bell state, in other courses of his lectures, a

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The next question presented for our consideration is, What is to be done? Is the bone to be set, and the knee bandaged? There will be many occasions for our remarking the impropriety in all kinds of fracture of bandaging the limb immediately after the accident has occurred; we must delay until the attending inflammation has been subdued. In reference to the accident we are now considering, this is a part of the subject of high importance, and one which ought to be well understood. Some years ago it happened thus:—there were four cases of fractured patella admitted into the hospital, nearly all at the same time, or in quick succession, and great satisfaction was derived from the success which attended them; but at last a man was brought who had fallen from a height, and shattered the patella by striking his knee against a projecting point. The young gentleman who had the charge of all these cases, being satisfied with the practice which had proved so successful in the former instances, thought that he would do right in pursuing the same treatment in this one also. Seeing the good effects of bandaging, and not having sufficiently studied the difference of the case, he applied a bandage the very day that the patient was admitted into the hospital. The effects were but too obvious on the first view of the surgeons; the pain, swelling, and inflammation, were excessive, and—not to dwell on an unfortunate occurrence—not the limb only but the life was lost.

I am satisfied that you will make the proper use of this case. Although it happened in this hospital, yet I am bound to relate it for your instruction; it conveys an impressive lesson, and should make us consider well the difference in the nature of the various injuries by which the patella may be fractured. In a case of this kind, when there has been a violent blow upon the knee-joint, inflammation will continue for a much longer time than when the bone has been simply broken by the action of the muscles. In the case of David Keith, it is mentioned that an attempt was made to bandage the limb, but it

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case which proves how cautious patients ought to be after the patella has been fractured. A patient was dismissed from an hospital with the portions of the patella united by a long ligament. Whilst he was carrying a burden on his head, he slipped, and the joint yielding, the whole anterior part of the knee was rent open and its cavity exposed, so that it was necessary to amputate the limb. He used to state this case as a reason why, on dismissing patients from the hospital, he ordered a splint to be put behind the knee-joint. It also affords a reason for endeavoring to bring the portions of bone as close as possible; when they are far apart, the integument is consolidated with the ligamentous substance, it loses thereby its elasticity, and the above accident may take place. Mr. Bell has suggested in these cases of fractured patella the use of the seton. When the cure has produced so far as to close the joint by a newly-formed membrane between the broken bones, he conceives it practicable to pass a seton between them, without penetrating the joint. If at the same time the portions of bone be pushed into close contact, there may be produced union, either by ossific matter, or by a short and condensed ligament.

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had to be desisted from, on account of the patients complaining of pain. But let me repeat, when the patella is broken by a direct blow, there is not the same separation of the portions of the patella, which occurs in the common cases; the blow breaks the bone, but still the strong fascia which covers the knee-joint, and is fastened to the patella, is entire, and prevents the splinters from being detached far from each other. In one case the patella was fractured into five different portions, yet they were all agglutinated and supported by masses of coagulable lymph, which in some parts had become ossified; this shows that there need be no anxiety about applying the bandages too early.

Bleeding and cold evaporating lotions, with all the antiphlogistic means, are first to be used, to subdue the inflammation. After this the bandages and pads may be applied so as to approximate and give support to the pieces of bone. Care is to be taken during the whole treatment to keep the leg in an extended posture: in the first place, to prevent a wider separation of the portions of the patella before the proper bandages can be applied, and because we cannot expect to bring the detached pieces close together, unless the muscles, which have a tendency to draw up the patella, are relaxed. The patient's body must be raised in bed, and he must have a bed-chair to make him sit up; or, if he grows weary of this position, attention must be paid to elevating the extended limb whenever he lies down, raising the heel by pillows, for the purpose of causing the knee to approach the pelvis, that the rectus extensor cruris may be relaxed.

It has been said that we should not try to unite this fracture by bone, and the fact that ligament is commonly the bond of union in fractures of the patella, has been regarded as a beautiful provision of nature for protecting the joint. If ossific union took place, then the patella, it has been argued, would present a rough, unpolished surface to the smooth articular cartilage of the joint, and might thus injure its delicate structure. But we need have no dread of bony union producing this mischief. I have examined, after death, four cases of fracture of the patella, consequent on direct blows received upon that bone, in which were exhibited the several stages of ossific union. They each proved that the roughness existed only on the outer surface of the bone. The specimen, which is now brought for your inspection, exhibits the pieces of bone attached closely together; and still they present an uniform surface internally, while externally, they are surrounded with masses of coagulable lymph, and of bony deposition, just as in fracture of the long bones. It is, therefore, the rule of parctice in all cases, to bring the broken portions exactly in apposition:—in the one case, with the hope of attaining ossific union from the bones being placed closely in contact with each other, or if we do not succeed in that, at least we may obtain a very short interval occupied with ligament; on the other hand, if it has been a case of fracture produced by a kick or a blow on the knee, then we may probably have success, similar to that in the case of Keith, in which we find the bone

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is compact, and the motion of the joint free. Several other patients have been dismissed from this hospital, in whom there has been the same reason to conclude that the union by bone had taken place.

There is a question at present much agitated among the senior members of the profession.—How comes it that the fractured patella is so seldom united by bone, and so frequently through the medium of ligament? In explanation of this we are led to consider what occurs when one of the long bones is fractured. If the humerous or femur, for example, be broken, it implies that there is great injury committed to the whole mass of flesh that surrounds the bone: it is bruised, and extravasation of blood is the consequence: the fractured ends of the bone also lacerate the surrounding textures; the blood is in this way permitted to lodge close upon the surface of the bone. Then tumefaction of the whole limb takes place,—inflammation is set up, and the blood, which was effused, undergoes a change in process of time, and coagulable lymph is substituted in its place; consolidation of the surrounding cellular membrane and periosteum proceeds gradually to make the limb firmer: there is adhesion between the two fractured ends, by means of this condensed mass, which is found fixed to the bones: this coagulable lymph gradually is converted, first into a substance of a cartilaginous hardness, and finally into true bone; spicula of bone having grown within it, they coalesce, so as to produce solid union. It appears that this great and extensive injury, this effusion of blood through the cellular membrane, this tearing of the flesh, and the consequent swelling and inflammation of the limb, all of which we might consider as disastrous, are essential for the reunion of broken bones. When we next contemplate what takes place during the fracture of the patella, produced by the action of the muscles, we perceive that there is a great difference in the circumstances. The bone has been snapped across without any corresponding injury being inflicted on the soft textures; the degree of violence is not considerable, the tumefaction that ensues is seldom very great; there is scarcely any ecchymosis. Thus there appears not to be sufficient injury inflicted for producing union by bone. We may observe the same thing when the olecranon has been fractured; or when the neck of the femur has been broken within the capsule. This last mentioned accident has given rise, it is well known, to much discussion among the most eminent of our profession. An explanation of the fact is sought, why in fractures of the neck of the femur, the union is commonly by ligament instead of by bone. It is not altogether from the difficulty of keeping the parts in apposition, that this is to be explained. In cases which I have examined after death, where the bone was fractured within the capsule, I have discovered that a thin membrane alone intervened between the portions, showing how nearly the parts had been kept approximated, yet, after all, they were not united by bone. Some other method must be used to account for the fact. The same reasoning which has just been applied to explain the want of

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ossific union in cases of fractured patella, may be employed here also. If the neck of the femur be broken across at its thin cervix, which is enclosed in the tough capsular ligament, the extent of the injury is very limited. There may be, perhaps, an increased secretion of the synovial fluid of the joint, but there are no cellular connexions torn up, into which the blood may be effused, and by which the broken ends of the bone may be surrounded, as in other cases; the fractured extremities are not supported by the consideration of the neighbouring parts, nor sustained by the same mass of inflamed structure, which is always found when the long bones are fractured at their centre. This appears to afford an explanation of the extreme rarity of union by bone in the case of fracture of the neck of the femur. A certain degree of violence seems essential for producing ossific union; and the neck of the thigh-bone included in its natural capsule is protected from receiving that degree of injury. A difference in the circumstances is attended with a difference in the results; for when the fracture occurs externally to the capsular ligament, then union by bone takes place. The splitting of the bone is attended with laceration of the neighbouring parts; blood is effused, and inflammation, with condensation of the surrounding muscles, are the consequences. To this point we shall recur when an opportunity again presents itself.

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REVIEWS AND BIBLIOGRAPHICAL NOTICES.

ART. IV. *Observations on Expansibility as a Vital Property, and on the Influence of the Capillary Tissue over the Circulation of the Blood.* By HUGH L. HODGE, M. D. *Lecturer on the Principles of Surgery in the Philadelphia Medical Institute.*
[NORTH AMERICAN MEDICAL AND SURGICAL JOURNAL, FOR JULY, 1828.—pp. 37.]

Notwithstanding 200 years have elapsed since the discovery of the circulation of the blood, that great and sustaining function of the animal system, is far from being thoroughly understood. We know, with the immortal Harvey, that, in man and the other mammalia, the blood is projected from the left heart, into a common conduit, which ramifies indefinitely; that it is received into the veins and returned by two trunks to the right heart, whence it is thrown into another arterial trunk, and again received from its ramifications by four veins, and restored to the cavities from which it first issued—having completed the tour of the whole body. Of the structure of the hydraulic apparatus, by which this *unique* circulation is effected, we know something—indeed, a great deal—but we do not know the whole. The *cardiac* portion consists of parts which can be seen and examined, but the *capillary*, are minute, intangible, in a great degree invisible, and constitute, in many of their parts, a kind of *terra incognita*. Having but a partial acquaintance with the anatomy of the circulation, it is not wonderful, that our knowledge of its physiology, should be imperfect;—for a machine must be surveyed in all its parts, before its mechanism can be understood. But the *modus operandi* of the central parts, themselves, is not yet fully revealed—notwithstanding the descriptive anatomy of those parts has, for ages, presented an aspect of great perfection. For example, it is still uncertain in what manner the cavities of the heart are dilated; and how far that organ

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performs the office of a sunction pump, upon the columns of blood in the great veins; or how its action, united with that of the larger arteries, occasions their pulsation. If doubts rest upon the physiology of that structure, which is well understood, the functions of that which is nearly unknown, must be enveloped in obscurity. Hence, there have been many "vain imaginings," as to the manner in which the small vessels receive, transmit, and vary the distribution of the blood. Of the opinions, which may be regarded as deductions from fact, there are two, which divide the physiological world. First, that the capillary vessels have a constant contraction, which tends to diminish their diameters and to resist the action of the heart; which, however, possesses such relative force, that the lateral contraction of the capillaries operates, of necessity, to push the blood forward into the veins. Secondly, that the capillaries, like the heart itself, alternately dilate and contract; thus receiving blood from the larger trunks by a suction, which co-operates with the *vis a tergo* impressed by the heart, and sending it forward into the veins. Either hypothesis may, perhaps, explain the phenomena of the circulation, when it is *in equilibrio*, but such a state is rather imaginary than real; for a perfectly equable distribution of the blood throughout all the organs, that is, a condition in which all the vessels are, simultaneously, filled to the same degree, in proportion to their capacities, does not, in fact, ever exist. The vital fluid is never equally distributed; but is found accumulated, successively, in all the organs and tissues of the body, according to the excited state of their functions. Now, no theory of the capillary circulation, that will not explain these physiological and pathological determinations into the different organs, and the consequent disruptions of the balance of the circulation, should be regarded as true or useful. To explain them by a reference to the actions of the heart is impossible; seeing that the blood is thrown by that engine into a common trunk; and, therefore, that the capillaries are all fed from the same fountain, and, of course, affected in the same manner, by the changes which it undergoes. To the capillaries, themselves, must we look for, the power which

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draws the blood into one organ, and withdraws it from others. But, on the first hypothesis, how can they do this? They do it, we are told, by doing nothing; that is, by contracting with less energy, in a particular organ, whereby, that organ suffers accumulation, from the general pressure of the vascular system; which directs the blood towards the weakest part—just as in any system of elastic tubes filled with a fluid, the one which is weakened will of necessity become distended. Every case of local plethora has, then, for its proximate cause, reduced power and contraction of the capillary vessels, in which it occurs. Now, this plethora is of two kinds, that which occurs in organs, when acted on by their specific stimuli, and thrown into the orgasm necessary to the performance of their proper functions; and that which results from abnormal irritation and constitutes disease. One of these, however, is natural and healthy, the other unnatural and morbid; and to refer them to the same condition of the same function—that of contraction—is to violate one of the soundest rules of philosophical logic. Moreover, it seems incredible, that the proximate cause of the high excitement which organs exhibit, when performing their functions, should be a state of debility.

We have, therefore, long been disposed to prefer the theory, which assigns to the capillaries an active agency in disturbing the equilibrium of the circulation; and in attracting increased quantities of blood, into particular parts; and have even ventured, when attached to the medical department of Transylvania University, to adopt and inculcate the opinion, that they possess dilatability, as well as contractility. To support this theory, is the design of the essay of which we now proceed to speak.

In the following paragraph, our author sets forth the object of his inquiry:

"All physiologists agree, that capillaries have the vital property of contractility, that they contract on the application of certain stimuli, and that the result of this contraction is the expulsion of their contents. The object of this paper, however, is to show, that capillaries have a vital property of expansibility,—that they dilate under

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the influence of certain stimuli, and that the effect of their dilatation is to draw blood into their cavities from the supplying arteries, and thus materially to facilitate the motion of this fluid in the large as well as in the small vessels. The facts to be presented in support of this opinion, will render it at least probable, that expansibility is a property, not only of the capillary tissue intervening between arteries and veins, but of all capillary vessels,—of the radicals of the veins, lacteals, lymphatics, and ducts of glands, and that it is possessed in a slight degree by the heart and arteries, also, as well as by the tissues confessedly erectile, as the penis, nipple, iris, &c." p. 3.

In the succeeding paragraph, he reasons with those who think, or suppose they think, that it is more difficult to form an idea of expansion than of contraction, in living tubes; and declares, with justness, that the latter is, in fact, as remarkable as the former. He then tells us that expansibility, as a vital property, is not a new idea, but was held by Borden and Hunter, and has lately found many advocates in Europe, and the United States. His object seems to have been, to embody all the known facts in support of that opinion, and these he has arranged under the following heads:

"The points to be discussed will all be embraced in the three following propositions, which I shall endeavor to sustain by facts and arguments.

"I. The capillary and arterial tissues do not dilate passively from a vis a tergo, derived from the heart and arteries.

"II. Some tissues possess expansibility as a vital property; that is, are capable of expanding under the influence of certain stimuli. This property is possessed most remarkably by the capillary system intervening between the arteries and veins, and by the radicles of veins, of the absorbents, whether lacteal or lymphatic, and of the excretory ducts of glands. That it also exists in the heart and arteries, perhaps also in the veins and the ducts of glands, as well in those structures denominated erectile, as the iris, penis, nipple, &c.

"III. The circulation of the blood in the arteries is powerfully aided by this dilating power of the capillaries, drawing the blood into their cavities; and this power of the capillaries is the almost exclusive agent in all increased local determinations of blood.

"IV. During the activity of inflammation, an increased quantity of blood flows through the affected part." p. 5.

In support of the first proposition, he cites many acknowledged and familiar facts; of which we consider it unnecessary to extract more than a single group:

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"Contusions, when so severe as to paralyse the vessels without destroying their vitality, leave a part pale for a longer or shorter period according to the violence of the blow. BOYER, in his Surgery (tome i. p. 105), notices several cases of local asphyxia from blows, "in which the heat, the sensibility, the movements, the pulsations of the arteries, in fine, all the phenomena of life, after having been apparently annihilated for many days, gradually returned and resumed all their former vigour." He cites from DE LA MOTTE the case of a boy whose right hand was completely paralysed by a blow with a billiard stick, received on the outside of the forearm; "the hand, for ten days, appeared to be dead; but at the end of that time the heat gradually returned, the beating of the arteries became perceptible, and the hand was restored to its natural condition." How can the supposition of passive dilatation be consistent with these facts? The vis a tergo from the heart and arteries, was perfect; other parts of the capillary system are dilated; but those vessels, whose powers are most exhausted, instead of being most dilated as they would be, if the theory were true, are the most constricted." p. 6.

The second proposition, that *some tissues possess expansibility as a vital property; that is, are capable of expanding under the influence of certain stimuli*, has received a great share of our author's attention; and is sustained by an array of facts, too well ascertained to be rejected, and too pertinent to be easily explained away. He begins, by referring to the acknowledged existence of erectile tissues, as first pointed out by Bordeu, and offers reasons for ascribing the 'expansile power to the vascular system.' We believe with him, that it belongs to that system, and resides in the nascent veins as well as ultimate arteries. We believe still further, that it is universal, in other words, belongs to *all* the minute vessels, but is greater in some than others; being proportionate to the physical necessity which may exist in different organs for copious, occasional supplies of blood.

In the first place, our author considers this property as appertaining to the absorbents, without which, he thinks, we cannot explain the function of absorption.

Secondly, he treats of it as a quality of the sanguineous capillaries; and the whole section is worthy of an attentive perusal; but we must limit ourselves to the following extracts:

"Certain stimuli or irritants are immediately followed by an enlargement of the capillaries; there is no evidence of prior contraction and subsequent exhaustion.

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"Caloric is a universal stimulus. When a portion of the cutaneous tissue is immersed in warm air or warm water, an immediate distention of the capillary vessels is observed. This dilatation by the stimulus of heat is as immediate as the contraction of a muscular fibre from any mechanical irritant; the one is as direct an effect as the other. There is no evidence of exhaustion or debility of the capillary vessels; for all the phenomena peculiar to life are augmented, such as heat, scarlet redness, circulation, and secretion. Neither should the effect be attributed to an increase of the vis a tergo; for, 1st, The enlargement of the capillaries occurs before the excitement of the supplying arteries; 2d, It is often great when there is no evidence of increased action of the larger vessels; and 3d, Such dilatations may often be excited by caloric, when the actions of the heart and arteries, including the supplying arteries, are exceedingly depressed. In all cases of prostration, where the pulsations of the heart and arteries can scarcely be perceived, where the surface is cold and pale, and all the organic vital phenomena are greatly diminished, warm applications are always resorted to; and when they redden the skin and produce inflammation or vesication they are advantageous. Where, in such cases, is the vis a tergo to dilate the capillaries? or what reason is there for imagining that the effect of the stimulus on these pale, bloodless, and weakened vessels, is to contract them, and thus to exhaust their power that they might yield to a vis a tergo? Further exhaustion would be death, which caloric, as every practitioner knows, would rather prevent than accelerate.

"These remarks respecting caloric may be extended to most other irritants. The puncture of a needle or the sting of a wasp, is immediately followed by redness; a mote under the eyelids instantaneously causes an enlargement of the vessels of the conjunctiva; a drop of nitric acid reddens the skin, and so of other irritants. In none of these cases is there evidence of contraction preceding dilatation; or of exhaustion directly or indirectly produced.

"Internal stimuli often enlarge the capillaries without any evidence of an increased vis a tergo. How instantaneous is the appearance of a blush, mantling the face and neck from the operation of certain passions. The enlargement of the small vessels, in blushing, is the result of a nervous irritation, not of increased action of the heart; for, 1st, This viscus is often undisturbed: 2d, In all instances the blush is partial; if owing to the contraction of the heart it would be universal: 3d, in violent palpitations and other increased actions of the heart, the capillaries are not distended as in blushing, but are often remarkably contracted. Their enlargement, as well as their contraction, must depend on inherent powers.

"The remedial agents, which increase the diameters, as well as the functions of capillaries, without augmenting the action of the heart and arteries, in other words, the vis a tergo, are very numerous. To this head must be referred most of the diaphoretics, diu-

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retics, expectorants, and cathartics. Mercury also will often produce local dilatations, secretions, and even inflammations of the skin, gums, tongue, and salivary glands, without any evident excitement of the general circulation. In such cases, is not the hypothesis unfounded, which maintains that the vessels, thus acted on by internal stimuli, and having all their vital phenomena increased, must be debilitated before they enlarge?

"Even the dilatations of capillaries from the diffusible stimuli, wine, brandy, &c. which do disturb the heart and arteries, cannot be owing to a mere mechanical impulse; for, as already hinted, the enlargement is often in an inverse ratio to the vis a tergo. Thus, when the action of the heart is violent, the capillaries are often undistended; and their distention is often very great when the cardiac pulsations are languid.

"Again: Whenever any excitement is manifested in the functions of a tissue, organ, or apparatus; or when any new or increased demand is made on such tissues or organs, the capillary vessels dilate to meet the emergency.

"Compare the different conditions of the capillary system in childhood and old age. In the former, all is activity, not only to replenish the various secretions and excretions so abundant in infancy, but especially to furnish the materials for growth. The capillary system is full and tense. In old age, the phenomena of life are diminished, nutrition and secretion are lessened; while wrinkles and emaciation are substituted for the fullness and tension of a prior stage of existence. The same difference is observed in the peripheral system of infants when in health and when diseased; and of the extremities before and after the occurrence of paralysis. Where the phenomena of life are most displayed, the capillaries are most developed; where they are diminished, these vital tubes are proportionally smaller. Surely, in the former case, they are not debilitated and passively dilated.

"The same remarks are applicable to all *general* excitements of the capillary system. Are not the vital energies in greater exercise, and the capillaries, at the same time, more dilated in an inflammatory fever than in a typhous fever, or in hectic wastings; during the ruddy excitement of health than during syncope; in the hot than in the cold stage of fever; during the stage of reaction than in that of collapse from concussion of the brain; when under the influence of heat than of cold; while the individual is burning with anger than when torpid with fear? That the capillaries in these and similar cases are not distended by an increased energy of the heart was proved in our first proposition.

"The same enlargement of the capillaries is observed in all cases of *local* excitement: cases in which no one contends that there is a diminution of any of the vital phenomena. The capillary vessels are enlarged in the growth of tumors; in tissues or glands for their increased secretion, whether temporary or continued; in the heads

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of animals which are renewing their horns; in the organs of generation of those female animals which are in season; in the brain and face, during excitement from moral or physical causes; in the uterus after conception, and even before the descent of the ovum; in the iris, nipple, and penis when appropriately excited. In none of these cases is there any evidence of exhaustion of power or an increased vis a tergo. In all, the manifestations of vital energy are increased.—pp. 14.

* * * * * * *

"During the acute stages of inflammation, the parts are very tense and hard; and moreover, when such parts are covered by any unyielding membrane, as hardened cuticle, fascia, periosteum, &c, the phenomena of inflammation are greatly enhanced, and the progress of the disease to suppuration or gangrene is hastened, while the fascia or membrane becomes very tense. Whence the distending power in such cases? Is it intrinsic or extrinsic?—Not extrinsic, because 1st, The distention is not proportioned to the excitement of the heart and arteries; being often great when this excitement is at the healthy standard, and sometimes even when the general circulation is greatly depressed. 2d, If the swelling and tension were owing to a vis a tergo, the resistance of the membranes, so far from aggravating, ought to cure the inflammation by restoring the equilibrium between the resistance of the small vessels and the vis a tergo. The passive distension of the former would be effectually resisted and the balance restored, which, according to the seductive simplicity of the *mechanical hypothesis* of Dr Philip, is the only desideratum in the treatment of inflammation. Hence Dr Lucas, one of his disciples, recommends pressure as one of the most powerful remedies for this disease; but every practical man knows the mischief produced by pressure from bandages, ligatures, tendinous sheaths, fasciæ, &c. during the acute stages of the phlegmasiæ; for, 3d, We find that the removal of pressure moderates the symptoms, shortens the disease, and facilitates resolution. Hence one advantage derived from fomentations and poultices in superficial inflammations in softening the indurated cuticle; hence the necessity for dividing in a transverse direction the tendinous sheath in paronychia and the fibres of faciæ during sub-aponeurotic inflammations. Relief could not be afforded by such measures, if the dilatation were passive; for the vis a tergo being increased and the capillaries being debilitated, the distension would continue augmenting until rupture or mortification should ensue.

"This objection alone, I regard as sufficient to overthrow the whole hypothesis of our opponents. When inflammation disappears, they say the balance is restored between the capillaries and the supplying vessels,—the disproportion between the resistance and the vis a tergo having ceased; but how can this ever occur spontaneously, that is, without the interference of the surgeon. The more the palsied capillaries are distended, the more incapable are

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they rendered of resisting the impetus from the supplying vessels. How then is the supposed necessary balance restored? How can the capillaries recover sufficient energy to resist an impetus, which, on their supposition is continually increasing? Rupture or gangrene we should imagine must be the result of every inflammation, in which art does not interfere with its pressure or its astringents.

"The distending power not being therefore extrinsic, depending on a vis a tergo, is *intrinsic*, and its exercise is the result of irritation. For experience shows that when the irritation is removed, the tension disappears: the same capillaries exposed to the same increased vis a tergo, will often diminish in size on the removal of the cause. Remove a mote from the conjunctiva, or a splinter from the skin, and the enlarged vessels are lessened, and the inflammation is resolved, notwithstanding the excited condition of the supplying vessels. On the contrary, the increase of irritation is necessarily followed by a more violent inflammation; its phenomena becoming more intense in proportion to the severity of the irritant, until the vital powers of the part become exhausted and gangrene ensues. Irritation, therefore, and not the vis a tergo, is the cause of the tension of inflamed parts. This irritation is generally increased by pressure, which hence aggravates the phenomena and accelerates the progress of inflammatory affections.—pp. 16—17.

In the third place, he enquires into the expansile power of the larger arteries, which he believes to have an existence, but in a less degree proportionably, than in the capillaries. In proof of this branch of the subject, he relies chiefly on pathological facts, most of which are familiar to the profession. We shall, therefore, pass over them, to lay before our readers, his comments on the experiments of Dr. Parry and Mr. Hastings, whose works on the Pulse, and on Bronchitis, are but little known in this country.

"Numerous experiments upon blood vessels made by distinguished physiologists, with other objects in view, prove the expansile power of arteries. I shall quote facts from two authors only, each of whom maintains opinions opposed to those which I am advocating. Mr Caleb H. Parry,* in his 23d experiment, after having exposed and carefully measured both carotid arteries, tied one vessel: the other increased in size. When this was also tied, it resumed its original dimensions; proving that the previous distention was not owing to a vis a tergo. To this conclusion, Parry himself was led; for he maintains as the result of numerous experiments, that the arteries are always during health distended beyond the size to which

*Parry on the Pulse, Ed. 1816.

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their elasticity would bring them (p. 69); and moreover, that this forced distension of an artery does not depend on the impulse of the blood from the left ventricle, (p. 71). This distension, he observes, is increased in local determinations of blood; and as it does not depend on the elasticity of the arteries, nor on the systole of the heart, "we are compelled to admit as the cause of the common dilatation of the larger arteries, and still more forcibly of that which is preternatural, the mechanical distending power of the blood which they contain."—p. 78. This explanation, however, is unsupported by facts; and it would be difficult to conceive how the blood, when in rapid motion through the arteries, could mechanically dilate one vessel and no other, unless some change previously occurred in the parietes of the tube.

"The second author to whom I refer for facts, is Mr HASTINGS,* who, after many and diversified trials, asserts that mechanical and chemical irritants applied to the larger arteries will often excite contractions and dilatation of the vessels in the part irritated. "This increase of motion did not arise from any modification of the heart's action; for the degree of dilatation and contraction in the unirritated part of the vessel nearer the heart was unaltered"—p. 26. Neither is the dilatation owing, as Mr HASTINGS would seem to intimate at page 31, to a diminution of irritability or to a suspension of power, for contraction would then be suspended instead of being augmented; nor to relaxation after prior contraction, for such alternate relaxations and contractions do not occur in muscular fibres (those of the heart alone excepted, to which we shall presently allude) when mechanically or chemically irritated. A tonic contraction exists, so long as the irritant is operative. The increased pulsation of arteries under the direct influence of stimuli, is, therefore, but a more clear manifestations of their normal actions;—dilatation being the result of stimulation as evidently as contraction. This is a very fruitful subject. It embraces all questions relative to the causes, nature, and varieties of the pulse, and admits of numerous illustrations. But the facts already adduced, taken in conjunction with the well known varying condition of the pulse in cases of sedation or diminished excitement of parts, as well as in those of irritation, prove that its condition, as to size, tension, and strength, does not depend solely on the systole of the left ventricle, but, at least to an equal extent, on the degree of excitement in the arteries; and that the actions of the arteries are greatly influenced sympathetically by the ever-varying conditions of the capillary tissue to which they are distributed. The formation of the pulse depends on the heart; but its size and tension, on the degree of excitement existing in the arteries and capillaries, so long as there is a free supply of blood.—pp. 20—22.

*On Bronchitis, London, 1820, p. 24, et seq.

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Lastly, he comes to examine into the expansibility of the heart, which he believes to be real; and shows that many physiologists have agreed in its *existence*, while they disagreed as to the *mechanism* by which its dilatation is effected. Without citing proofs of that which is so unanimously admitted, we shall conclude our notice of the second proposition, by quoting his final remark.

"The heart would hence appear to possess an active dilating power, exercising a slight suction influence over the blood in the large veins near this organ, and thus facilitating, instead of opposing the ingress of the blood. Evidence, I think, is yet wanting to prove, that any part of the circulatory apparatus, during its healthy condition, resists the motion of the blood. Each portion co-operates, and beautifully harmonizes with every other portion, in carrying the vital fluid through the circulation,—an idea to be further illustrated in the ensuing proposition.—p. 23.

His third proposition is, that 'the circulation of the blood in the arteries is powerfully aided by this dilating power of the capillaries, drawing the blood into their cavities; and this power of the capillaries is the almost exclusive agent in all increased local determinations of blood.'

In verification of the two members of this proposition, he has accumulated a great body of facts; though as he justly remarks, if the preceding propositions are true, this must flow from them as a corollary. In the first place, he surveys the circulation of the sap in vegetables, and finds abundant evidence, as he thinks, of the existence in them of a power of suction, dependent on the expansibility of their vessels. We have room to extract but a single paragraph:

"The sap ascends when the trunk and branches are subjected to the influence of a warm atmosphere; but it remains in the root when such stimulus is not applied. It is manifest, that the caloric, in such cases, operates on the superior or exposed portions of the plant; the roots, buried in the soil, being comparatively unaffected by atmospheric variations of temperature. Examination proves, that parts thus stimulated swell, and, from a comparatively dry state, become moist and suculent; in other words, that the vessels dilate under irritation, attract or suck in the nutritious fluids, whence result leaves, buds, blossoms and fruit. There is no vis a tergo to distend the

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whole peripheral system of vessels, and in such textures, dilatation must precede the entrance of fluids.—p. 24.

Passing from plants to animals, he presents us with various appropriate observations, of which we shall transcribe the following:

"Dr PHILIP and Dr HASTINGS* state, that in five dissections, the circulation in the smaller vessels will continue for several minutes after excision of the heart. In the mesentery, Dr PHILIP has observed that the circulation proceeded with regularity for half an hour after the removal of the heart†. If contraction were the only vital action, the blood would be driven out of the small vessels; and as no vis a tergo existed from the heart, their dilatation could not occur, but the vessels would remain collapsed and the part bloodless, as in syncope and local asphyxia. Professor HORNER also informs us, that during live dissections, the capillary vessels remain distended, after the heart has ceased to act, and so long as any blood remains in the arteries,—the larger vessels becoming first empty, then the smaller ones, and finally the capillary tissue.

"These phenomena cannot depend on mere vital contraction of the vessels: for such contraction would occur more readily in the capillary system, the irritability of which is greater than that of the arteries; and this contraction would not, as shown in Proposition I., be overcome by the vis a tergo from the contraction of the arteries. Hence, the influence from the heart being removed and the capillaries contracting, the blood would remain in the arteries, on the supposition that 'contractility were the only vital property. But the arteries are found empty before the circulation has entirely ceased in the capillaries, and while these last remain turgid. The capillaries hence manifest a dilating power, drawing blood into their cavities, and assisting the arteries in discharging their contents. This being effected, the contractile powers of the capillaries throw the blood eventually into the venous system where it remains. In this way, I think, the emptiness of the arteries after death may be satisfactorily explained.

The above explanation is confirmed by attending to those few cases in which the arterial system remains distended: as when death has been suddenly caused by some powerful impression, as by lightning, a blow on the stomach, &c. Here the whole of the circulatory apparatus appears to be paralysed, and the blood is generally found fluid. No vascular action continuing after the cessation of the vis a tergo from the heart, the blood remains at rest.

Stimuli cause an afflux of fluids to the part irritated. In Proposition II. *g*, *h*, *i*, *k*, various examples were detailed to prove the

*Essay on Bronchitis, p. 51.
†Essay on Vital Functions, 2d edition.

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active enlargement of the vessels under irritations, in all such cases, fluids flow in increased quantities to the part. Whence this afflux? It is not owing to a vis a tergo from the heart and arteries, for this remains as before, and the capillaries are not debilitated (Proposition II, *g*, *h*, *&c.*) And even if they were debilitated, the part would not be distended by the vis a tergo (Proposition I.), and of course no increased flow could occur. The fluids are evidently attracted to the part irritated, and as dilatation must precede their entrance, I infer that such dilatation, excited by stimuli, is the immediate cause of all such local determinations of blood. This view is confirmed by the fact, that the afflux is proportioned to the irritability, and vascularity of the part and to the severity of the stimulus. They increase and decrease *pari passu*. The contraction of the heart, acting upon a single column of blood, can have no effect in increasing or diminishing the flow of blood to any tissue. Such local changes depend therefore, on local causes, and chiefly on the varying degree of excitement in each part.

"The influence of the capillaries, in drawing blood from the larger vessels is often exemplified in the operation of sinapisms, blisters, and other rubefacients in prostrated states of the system,—where the surface is cold and pale or lived, where the pulse can hardly be felt, and the phenomena of life are almost extinguished. What is the modus operandi of such remedies in exciting reaction? Do they first increase the vis a tergo, the actions of the heart and arteries, that the capillaries may be distended? or do they not primarily excite the torpid capillaries, whence dilatation and afflux of fluids, and afterwards secondarily and sympathetically, the arteries and heart? The last view seems correct, because such local irritations are often excited, when the arteries and heart do not sympathize; and in all cases, the capillary excitement precedes the general excitation.—pp. 27—29.

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"The rapid enlargement of the capillary and smaller arteries after the main artery of a limb has been tied was alluded to in Proposition II. *l*. The afflux of fluids to the cold and bloodless limb is no less evident than the dilatation of the vessels, and as the vis a tergo is diminished, while the redness and temperature are augmented, we must infer that the blood was moved by some other power than that derived from the heart and arteries; that the excited capillaries absorbed blood from the superior portions of the limb.

Dr. N. R. Smith, of the University of Maryland, records an interesting example of this kind*, in which a ligature was applied to the anterior tibial artery for a wound of this vessel. The hæmorrhage from the wound, and the pulsation of the artery on the top of the foot, ceased on drawing the ligature; but after some hours, the bleeding returned from the inferior orifice. The artery on the in-

*Philadelphia Monthly Journal, vol. ii. p. 18.

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step now pulsated vigorously, the beat was stronger and more full in the wounded limb than in the other, and the blood, on experiment, was found flowing in a retrograde direction. The circulation here was more rapid by anastomosing channels than when the blood pursued its direct course.

"Professor SMITH was called upon to amputate the leg below the knee for a dry gangrene of the foot and ancle. The great arteries were found ossified, being mere tubes of bone. "Though all pressure was removed from the artery above, and no other means were used to suppress the hœmorrhage, yet not half a table spoonful of blood followed the operation. At the same time, the action of the heart, and of the arteries at the wrist, was vigorous."—p. 205. As no coagula existed in the arteries, and as the anastomosing vessels were not enlarged while the parts below had been supplied with some blood, it results that blood must have passed through these ossified tubes before the operation, and that its motion was not owing to the vis a tergo, as the open ossified tubes did not bleed when divided. Hence "the active power lost by the division of the arteries, resided in the capillary system of blood vessels of the foot and leg."—pp. 30—31.

Having, with these and many other similar facts, rendered it highly probable, that the capillaries, by their alternate dilatation and contraction, aid the heart in propelling forward the blood, he proceeds to say that, in many cases, they are, alone, adequate to the circulation. For the support of this assertion, he refers to comparative anatomy, and cites the invertebral animals which have no heart, and still maintain a vascular circulation, and to fishes which have a single heart only, and that devoted to the branchiæ or gills, leaving to the vessels, themselves, the responsibility of maintaining the systemic circulation. In man, he notices the portal circulation, which can receive no aid from the heart, except through the capillaries of the abdominal viscera. We have no doubt, however, that the hepatic capillaries are aided by the suction power of the heart and chest, especially the latter, the influence of which must be greatest immediately without its walls and floor; consequently, cannot, any where, be more efficient, than in that portion of the vena cava ascendens, which receives the hepatic veins. Omitting any further reference to the proofs by which he has sustained this proposition, we shall extract his concluding remarks:

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"From the facts and arguments which have been presented for the support of the present Proposition, it results that the contraction of the heart and arteries is not of itself adequate to the propulsion of the blood; and that capillaries, possessing a dilating power, draw blood into their cavities, and thus assist the impetus derived from the heart. The combined influences, derived from the contraction of the heart, arteries, and capillaries, impel the blood forward into the veins, where further assistance is rendered by the contractile power of these vessels, and when near the heart, by the suction influence of this organ and of the thraox. All parts of the circulatory apparatus thus assist each other, instead of furnishing obstacles to the circulation of the blood, as maintained in the present systems of physiology.—p. 34.

Our author's fourth proposition, that, *during the activity of inflammation an increased quantity of blood flows thro' the affected part*, is sustained by a series of facts, which we regard as altogether conclusive. To our apprehension, indeed, all the phenomena of active inflammation indicate increased *transmission*, not less than increased *accumulation*. The scarlet hue, increased heat, augmented sensibility and size, turgescence of the veins leading from the part, when if, obstruction and stagnation existed in it, they should be comparatively empty, finally, the copious hœmorrhage which ensues from incisions, are signs, not to be misunderstood, of great activity, as well as great fullness of the vessels. In addition to facts of this kind, our author has cited many others which we must pass over, to present the deductions which he has made from them:

"The phenomena and consequences of inflammation thus evince the close analogy which exists between this morbid state and those various processes of the animal system, in which every one recognizes an increased circulation; such as the renewal of a stag's horns, the growth of tumors, the erection of the penis and nipple, the enlargement of the uterus, the distention of the mammæ, and the subsequent secretion of milk, &c. The one class of phenomena manifests as decidedly as the other all the evidences of capillary excitement, and of an increased flow of blood through the affected tissues—.p. 36.

Having travelled over the series of facts and observations which constitute the body of his essay, we shall finish our extracts, with his final conclusions:

"If the object of this essay has been attained, it results that expansibility is a vital property, as well as contractility, and that both are

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modifications of the irritability of many modern pathologists; that the heart, arteries and capillaries, possess this property of dilating under the influence of their normal stimuli, but do not enlarge from any vis a tergo to which they are subjected; and finally, that they contribute by active expansion and contraction, at regular or irregular intervals, to the ready transmission of that vital fluid which is essential, not only to secretion and nutrition, but also to reparation.—pp. 36—37.

In bringing our notice of Dr. Hodge's paper to a close, we feel it but a duty to say, that it has merits of no ordinary stamp. It is true, that his fundamental propositions are not original; but they were not established; and, although, he has brought to their support, but little not already known, he has done that which entitles him to much praise. He has clearly set forth the doctrines of which he is an advocate, and concentrated upon them a greater body of facts and arguments, than any other writer with whom we are acquainted. These have been industriously, drawn from every available source, are accurately expressed, and logically arranged. Every page bears the impress of an acute and disciplined mind; enriched with the learning requisite to the undertaking, and capable of that profound investigation, which the subject of the essay so imperiously requires.

To say that his dissertation contains nothing objectionable, would be to bestow upon it the praise, which could not, in sober truth, be awarded to any professional essay extant; but we deal in no exaggeration, when we pronounce it highly interesting, and recommend it to the attentive perusal of all our American brethren.

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MISCELLANEOUS INTELLIGENCE.

ANALYTICAL AND ORIGINAL.

1. *Ununited fracture cured by Compression.*—Dr. Thomas H. Wright, Physician to the Baltimore Alms-house Infirmary, in the 4th No. of the *American Journal of the Medical Sciences*, has published several cases, which go to exemplify and sustain the influence of Compression in cases of ununited fracture.

Case 1st. was that of a carpenter who fell from his scaffold and suffered an oblique fracture of the lower part of the tibia, a fracture of the fibula, and a projection of the end of the former bone through a ragged wound of the integuments two inches in extent. Three or four months after the accident, the bones were ununited and all signs of ossific orgasm were gone. Dr. W. then determined on trying pressure.

"The simple, efficient, and surgical mode of making pressure by the tourniquet, since successfully practised by Mr. Brodie, did not occur to me. A strong, soft, double napkin was passed under the leg, extending from below the ancle, to the head of the tibia, pad-compresses of suitable size, were laid, which, when braced by the general bandage, acted as counter-wedges on the line of fracture. The bandage or napkin first laid, was drawn firmly around the limb, and confined at short spaces; at first by large pins, and afterwards by tacks. It was thus made to give uniform support and a regulated pressure through the compresses on the line of fracture, and to adapt itself closely to the contour of the whole limb from below the ancle, sustaining the inferior fragment to the top of the leg. The principle, in short, was that of the laced stocking, modified to act especially on a definite point and space. The compressing bandage was inspected, and generally tightened twice a day, and always drawn as firmly as the patient's feelings would allow. The limb was kept extended and in splints, to maintain steadiness, and preserve the correct axis of the foot on the leg.

"The favourable tendency of this treatment soon became manifest. In ten days the chasm or interval of the edges of the bone along the line of fracture, was much diminished, the bones having sensibly approximated by absorption of the interposed deposit. After three

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weeks the depression which had always marked the line of fracture, and extent of separation, was obliterated to the touch, and the ends of bone seemed in close contact. Now, too, the tendency to eversion of the foot was lost, and moderate lateral pressure on the foot did not cause any parting at the fissure. A further particular detail is unnecessary, perseverance in the course described, produced at the end of five weeks from its adoption, unequivocal bony union. At that period the patient could elevate the whole limb; flex, extend, and rotate the foot freely, without the slightest evidence of motion in the line of fracture. The splints were thrown off, but the compressing bandage directed to be worn less firmly applied for some weeks, and the patient admonished to avoid for the present throwing the weight of the body on the affected limb.

"The cure in this case became perfect, and when the limb was enough recovered to take its share of weight and motion, it was found to have shortened less than one-fourth of an inch. The man walks now without halting, and as firmly and well on one limb as the other. This patient was confined to bed nineteen weeks and two days; and it was six months from the accident, before the consolidation was sufficient to permit use of the limb in walking.

Case 2nd. was that of a man 60 years old. Both the bones of his leg were broken, and the tibia nearly projected through the skin. The fibula united, but no union of the tibia took place under the ordinary treatment. The patient had been intemperate; and, previously to the accident, the leg was in a state of chronic enlargement, from infiltration and thickening of the cellular substance. Under these unpromising circumstances,

"It was determined to try strict and continued pressure. With this intention, a roller was laid regularly from the toes to the knee. Over this was applied short splints, made of binder's boards cut to suit the outline of the limb, then macerated, that they might be made to adapt themselves intimately to the surface about the fracture. Those splints were laid, while pliable from wetness, on opposite sides of the fracture, and braced in their place, as firmly as could be borne, by a second roller, carried from the ancle to the top of the leg. Two latteral splints of the same material, not macerated, were next applied and secured at intervals by a few turns of a roller. These splints were sufficiently long to steady the leg, and prevent motion of the foot, the wood splints first used were laid aside, and the patient confined to bed, with the limb extended. An occasional change from the recumbent to the sitting posture, was allowed the patient; but he was altogether prohibited from getting out of bed or bringing the limb into use.

"An evident change in the relation and aspect of the parts, was observed in a fortnight after this course was instituted. When the

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plan of compression was adopted, the superior fragment of the tibia projected so sensibly at the point of separation, as to cause much deformity by its remarkable prominence. At the end of two weeks, this projection was much reduced, and by the fourth week, the bone had regained its natural level; doubtless, by the influence of pressure on the deposited matter, which had occupied the interval between the fractured surfaces. The facility and range of motion at the fracture, were also lessened though still discoverable. The pressure, together with confinement to position, were steadily maintained for six weeks. The long splints were then taken off, and the patient permitted to put the limb to the floor, and, supported by crutches, to bring it cautiously into use. The roller and close splints were kept on some time longer.

"When the point of fracture was examined, some weeks after the patient began to use the limb, the part appeared very firm. No pressure, which it was thought proper or necessary to employ, whether directed immediately to the fracture, or by using the foot as a lever to rotate the limb freely, caused the slightest indication of disunion. In a month or six weeks after the limb had been brought into use, the patient threw aside all artificial supports, and walked as well as before the accident. There is no discoverable shortening of the leg.

Case 3. This was a fracture of the ulna. At the end of five weeks, not the least union had taken place.

"Pressure was resorted to in this instance also. A roller was laid smoothly from the fingers to, and some distance above the elbow. Short splints, of binder's board, were fitted to the interior and external surface of the limb, to afford sufficient lateral support, and were well secured in place by a roller. A long splint of binder's board, incurved, and adapted to the arm, was laid along its ulnar line, extending below the wrist to support the hand, and a shorter splint of the same material rested on the radial side, the two forming an external case for the arm, not quite close, or meeting at the edges. The splints were made to embrace the arm by straps at short spaces, which, particularly at and near the fracture, were drawn as tight as could be borne. A due degree of pressure was thus constantly maintained as long as necessary, and the result was satisfactory in this instance as in the preceding cases.

2. *Salivation from inhaling the breath of a patient labouring under that affection.*—We have taken some pains to ascertain the correctness of the following information, and feel compelled to receive it as true.

Mr. George Howard, of this city, in the year 1826, was requested to shave one of his friends, who was at the time a patient of Dr. Barnes and profusely salivated. Mr. H. found his breath extremely offensive, but was compelled to inhale it

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for some time, as the operation was tedious. He was himself in perfect health, and subsequently took no medicine of any kind; but in three days, a sore mouth, a copious spitting, and a disagreeable breath, began to show themselves; and it was soon apparent that he laboured under a true and profuse salivation. Dr. B. saw him and found his breath highly mercurial. In a few days all the symptoms disappeared, and left him in his usual health.

I am aware, that a certain class of physiologists will insist that there is in this statement some mistake; but why should they? Rejecting all the accounts that were *formerly* published, relative to the discovery of mercury in the systems of those who had died after having recently taken its preperations, we have in our own times unquestionable evidence of their absorption; we have, also, conclusive proofs, that foreign substances are eliminated from the system, through the kidneys, skin and lungs. If mercury, which is slowly volatilized, at a heat below that of the human body, should be introduced into it, why may it not escape with the gaseous exhalations of the lungs; and if these, containing mercury, should be inhaled by another person, why may they not excite ptyalism? We know no reason why they should not; seeing that mercurial vapour when generated by heat in the laboratory, speedily salivates those who inhale it.

3. *Poisonous Expectoration in Phthisis.*—The following fact, although not of recent date, deserves to be recorded.

In the year 1802, Judge McMillan, of the neighborhood of this city, a few weeks before his death, from Phthisis Pulmonalis, informed his physician, Dr. Goforth, that when sitting at his door, and accustomed as he was to spit the matter which he coughed up on the surrounding turf, he frequently saw it eaten by chickens, in whom it produced *vestigo terminating in a transient state of insensibility and loss of muscular power.* The intelligence and veracity of both the patient and physician, were such, that we see no reason to doubt the fact.

4. *Death of Dr. Post.*—This distinguished member of the profession died in the city of New-York, on the 14th of June last, in the 63d year of his age. He had been a professor of An-

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atomy in his native city, for 32 years—from 1793 to 1825 when he resigned from bad health. As a public teacher, he was much esteemed for his simplicity of manner and his numerous practical facts. The Editors of the New-York Medical and Physical Journal, ascribe to him the enviable distinction of having for 20 years been the 'undisputed head of the profession in that city.' We, ourselves, lately had the pleasure of an interview with the deceased, and were much pleased with his dignity, intelligence and suavity. The Medical Society of New-York, have appointed Dr. John A. Smith, the present professor of Anatomy, in the school to which Dr. P. had belonged, to pronounce his eulogy.

5. *Resignation of Dr. Godman.*—We regret to learn, that the health of our ingenious and estimable friend, professor Godman, of Rutgers' Medical College, New-York, has declined so much, as to make a resignation necessary. On receiving his communication, the President and Faculty resolved, that his ill health was deeply to be regretted, not only as a severe loss to the high standing of the Institution, but more especially for the lively interest they took in the personal welfare of one who had endeared himself to them, by his social virtues, no less than by his intellectual and professional endowments. Dr. Godman's diseases are, in a great degree, the result of an application which has raised him into a distinction which few men of his age have attained in this country. His successor has not yet we believe been appointed.

6. *Tribute of Respect to Dr. Holyoke.*—We are indebted to the last number of the new *Boston Medical and Surgical Journal* for an interesting account of a tribute of respect, which in this instance at least, is honorable to all the parties concerned. Edward Augustus Holyoke, M. D. & L. L. D., of Salem, Massachusetts, within the present moth, having attained to his hundreth year; a number of the most distinguised physicians of Boston and Salem, determined to give him a public dinner, as an evidence of their veneration for his various excellences of character, displayed thro' three successive generations. The following account of the ceremonies of the day will, we are sure, be read with interest.

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The venerable Nestor of the profession displayed a degree of health and cheerfulness which cannot be called less than wonderful when connected with his extreme age. The firmness and elasticity of his step, in proceeding to and from the Coffee House, where a dinner was prepared for the occasion, though not an unfrequent subject of observation to the community, all of whom look up to him with more than the veneration due to a father, was viewed with a peculiar interest at that time. His rich and graceful dress, also,—of an ante-revolutionary fashion and texture, resembling neither in form nor colour the garments of modern time, and of which an adequate conception can only be obtained by the examination of ancient portraits,—deserved and received particular notice. The suavity, ease, and highbred politeness of the old school, displayed by the patriarch in receiving the congratulations of his brethren, and in bidding them adieu at the close of the festival, will long be borne in the minds of those who had the happiness to witness his characteristic exhibition of those qualities.

Dr. Holyoke has so long held a distinguished rank in the profession, that forty-seven years ago, when the Massachusetts Medical Society was organized, he was the first to be elected President of that important and useful institution, to which office he was annually elected for several years; and ten years ago, at the age of ninety, he succeeded the late President Adams as President of the American Academy of Arts and Sciences. The celebration was eminently a medical one, designed to show the respect felt by the profession for him who had so long and so honorably practised it. The only guests from without the profession were the Rev. Dr. Prince and Rev. Mr. Brazer, one long an associate and friend, the other the Pastor of Dr. Holyoke. The company, consisting of about fifty physicians of Boston and Salem, were assembled at the Lafayette Hotel in Salem, when a little before two o'clock Dr. Holyoke entered, accompanied by the committee of arrangements. The gentlemen present were severally introduced to him, and soon proceeded to the dining-room, which was tastefully decorated with flowers by some young ladies, assisted by two medical students. The dinner was well ordered and sumptuous. A blessing was asked by Rev. Dr. Prince, and thanks were offered by Rev. Mr. Brazer. Dr. Jackson, President of the Massachusetts Medical Society, presided at the dinner, assisted by Dr. Oliver of Salem, President of the Essex District Society, as Vice President. The following are some of the toasts.

Our venerable guest;—Venerable for his age; still more so for a life devoted to the interests of humanity and sanctified by religion.

Dr. Holyoke then gave the following:

The Massachusetts Medical Society;—May it flourish and prosper, may it continue to improve the Art for which it was instituted, to the utmost of their wishes, and be the means, under Providence, of alleviating the pains and evils of life, and promoting the happiness of society, by suppressing quackery and rendering the business of

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the profession as perfect as the nature of things admits. And may each individual of the Society, and every other gentleman here present, enjoy health and prosperity, and the pleasing consciousness that he has contributed somewhat to the advancement and improvement of the public welfare.

This toast was handed to the President in a clear hand writing, having been written by Dr. H. himself without glasses.

Honor to the old age which comes full of honors; to every one that hath shall be given.

The good fellowship of the Medical profession;—In all divisions, let it be our effort to promote an *union by the first intention.*

The Holy-Oak of the American Materia Medica; fructibus decora, sublima attollens ad sidera caput."

Fifteen months ago, we had the honor of a short visit to this venerable centenarian, whom we found disposed and qualified for conversation; and especially inclined to converse on the subject of climate, which had through life been with him a favourite theme. In rising to leave him, he followed us to the door, where we left him making an observation on the state of his thermometer. He is probably the oldest physician living.

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THE

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ESSAYS AND CASES.

ART. I.—*Observations on the reciprocal Morbid Influences of the Abdominal and Thoracic Viscera.*—BY THE EDITOR.

Most diseases are seated in one or more of the great cavities—cranial thoracic, abdominal and pelvic. It rarely happens that any malady extends to the whole; but examples of the propagation of a morbid state from the organs of one cavity to the organs of another, are far from uncommon. I propose briefly to inquire into the modes in which diseases of the abdominal or portal viscera may raise diseases in the thoracic and *vice versa*.

I. Of the various ways in which the portal viscera may affect, unfavorably, the thoracic.

1. By Sympathy. I restrict the term sympathy to the influence which one organ exercises over another, through the instrumentality of the nervous system. How that system establishes associate and sympathetic actions, between organs remote from each other, we can no more explain, than we can tell why the same system makes us acquainted with the existence and properties of surrounding bodies. As without its aid, in the latter mode, we should be ignorant of what passes about us; so without its aid, in the former case, our organs would, in a great degree, be unacquainted with each others condition. They would not be combined into a physiological unit; but remain insulated, except as far as they

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depended for the necessary nutriment on a common fountain. They would be like ununited provinces, scattered along the banks of a common river, from which they might all obtain supplies, and grow and flourish, according to the volume of its waters, while they were utterly unconscious of each others existence. Now it is the nature of the nervous function, to make the well-being of one organ, in some degree, a cause of the well-being of other organs; and the ill-being of one organ, a cause of the ill-being of other organs—sometimes one, sometimes more.

The question here arises, whether the organ diseased being given, we can determine *a priori*, what organ or organs will suffer through sympathy? I answer that, in general, we cannot. We might suppose that the viscus, most intimately associated with the affected organ, would be the first and greatest sufferer; but we do not find such, invariably, to be the fact; and many reasons might be assigned, why, if that assumption be theoretically, true, it may be often practically false. Thus, in the first place, there are other modes of propagation of disease, besides the one we are now considering, which may often modify or countervail it; and secondly, if an organ, congenitally or casually, happen to be in a bad condition, when disease is awakened in some other organ, the former may become the sympathizing sufferer, however remotely situated, or slightly connected, in its functions, with the latter.

But to return to the object in view, we repeat that disorder in the functions, of one or more of the abdominal viscera frequently carries disorder into the functions of the thoracic viscera, through the medium of the nervous tissue. The sub and super diaphragmatic organs are supplied by nerves, which have the most intimate anatomical relations. The pulmonary and cardiac plexuses are both formed by detachments from the pneumogastric nerves, united with others from the intercostal ganglions; and the splanchnic, have a similar composition, with an augmented proportion of ganglionic branches. Hence the nerves of the heart and lungs originate contiguous to those of the liver and stomach, and

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are, of course, liable to be morbidly affected by the morbid states of the latter.

2. Excess of digestive function may contribute to the production of thoracic disease, by generating a plethoric state of the circulatory system: Thus palpitations and hypertrophies or hœmoptysis may sometimes depend, in part, though remotely, on excessive functional excitement in the digestive organs.

3. When inflammation, in one of the abdominal viscera, extends its influence to the heart and brain, and induces, in their functions, the change which leads to symptomatic fever, the heart is disordered by sympathy. In this state of increased energy and action, it may raise an inflammation in some of the thoracic tissues, which would, thus, become diseased through its intervention, presenting us with a different mode of propagation from either of those already mentioned.

4. The veins of the stomach may absorb foreign matters, which being carried directly to the heart and lungs, may act as irritants, and induce, or predispose to disease.

5. The digestive function of the stomach, bowels, liver and mesenteric glands, being disordered, chyle of an unhealthy quality must necessarily be prepared, which, being transmitted to the thoracic viscera, cannot fail to pervert their vital properties, and contribute to the production of a morbid state.

6. When the liver fails in the secretion of bile, and its elements are left in the blood, they prove injurious to the health of the heart and lungs, in common with the other organs of the body. As the bile performs an important office in the bowels, we cannot refer it to the class of purely excrementitious fluids, like the urine and perspiration; but still there are numerous facts which demonstrate, that its elements are developed in the blood, and must be eliminated from it. As it respects the blood vessels, they are excrementitious; and to the lungs they seem especially prejudicial. They probably irritate that organ into a kind of vicarious excretory action. Between the liver and lungs, there is this analogy that they are both transmitting organs of venous blood;—

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one for the abdominal viscera, the other for the whole body; and at the same time, they exert upon it a species of depuratory action. An interrupted excretion of bile from the ducts of the liver, is known to be followed by the return of that fluid to the blood, where it plays nearly the same mischievous part with the retained elements. It is worthy of remark, that the influence of the biliary elements is exerted largely upon the serous membranes, producing dropsical effusions, and hence, in part, the frequency of hydrothorax and hydropericardium in hepatic disorders.

7. Enlargement of the liver prevents the full and easy descent of the diaphragm, and thus embarrasses the lungs in their operations.

8, And lastly. The muscles of respiration are subservient to several offices of the abdominal viscera; such, for example, as vomiting and fæcal evacuation; and, therefore, it is necessary to give to these organs the power of exciting those muscles. This is effected through the medium of the nervous system, and is, indeed, a species of sympathy. In certain kinds of abdominal irritation, the muscles of respiration are thrown into spasmodic action; as we see in a paroxysm of asthma from acid or bile in the stomach.

It seldom happens, indeed never, that the morbid influence of the abdominal over the thoracic functions is exercised in any single mode here pointed out. They are of necessity combined. Thus, in dyspepsia, the lungs and heart are affected through the nervous system, that is sympathetically, and, at the same time, such unhealthy chyle may be sent to those organs as must contribute to the production of their derivative maladies. And, thus, when the liver is inflamed, the lungs and the respiratory muscles may be injured through the nervous tissue, while, simultaneously, the secretions of bile being, partly or wholly, suspended, the lungs or their membranes may suffer greatly from that cause, in the manner pointed out.

As to the relative influence of the different modes which I have assigned, it would be difficult—or rather impossible—to speak with precision. The principal seem to me to be the

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three following, which are influential in the order of enumeration.—1. Nervous connexion. 2. Suspended or perverted hepatic secretion. 3. Morbid chylification.

II. Of the morbid influence of the thoracic viscera, upon the abdominal.

The organs of the chest, when diseased, may carry a morbid action into those of the abdomen; but the modes in which they effect this, are fewer than those in which the latter influence the former.

1. When the heart or lungs is diseased, the digestive organs are liable to suffer from sympathy; of which we have examples in the anorexia and constipation, generally, attendant on acute pneumonic inflammation; in the vomiting which accompanies pericarditis; and, perhaps, in the diarrhœa and fistula in ano, which occur in Phthisis.

2. When, from any cause, the heart is greatly excited, it may raise an inflammation in the abdominal viscera as well as in any other part of the system.

3. When the lungs are so diseased as to perform their function of æreation imperfectly, it is probable, that the matters which they should eliminate, are sometimes thrown upon the liver, or the gastro-enteritic mucus membrane, contributing to the production of diarrhœa.

4, and lastly. When the lungs fail in their transmitting power, or the right side of the heart, which maintains the pulmonary circulation, has suffered such a lesion that it cannot act efficiently, the returning blood is obstructed and accumulated in the venæ cavæ, and the circulation in the liver is of course disturbed. Hence, in part, the hepatic disorders so often present in organic affections of the chest; and so frequently mistaken for the cause of that of which, in reality, they are the effect.

From this synoptic view of the reciprocal morbid influences of the abdominal and thoracic viscera, we might infer that the former preponderate over the latter; in other words, that the heart and lungs are oftener thrown into disorder, by diseases of the liver, stomach and bowels, than the latter are by the maladies of the former; and such we know to be the

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fact. Thus, observation confirms the suggestions of theory; and demonstrates the utility of a reference to the anatomical and physiological relations of the organs, when we would understand the propagation of morbid actions through the system.

As the object of this little paper was chiefly to indicate the principal modes of morbid intercourse between the organs of two great cavities, I might here bring it to a close; but not having trespassed long upon the patience of the reader, I shall devote a few pages to the morbid influences of the principal viscera of each of these cavities, upon one another.

III. Of the abdominal organs. These are intimately united, both in structure and function. The peritoneum envelopes the whole—their veins unite to form the vena portæ—and their nerves are derived from the great solar plexus. Each organ is destined to perform an office, which is an element in the aggregated function of digestion, and should it fail, the whole abdominal economy is liable to disturbance. Of the modes in which this disturbance may occur, the following are the principal:

1. These organs influence each by sympathy. Thus, acidity of the stomach impairs the peristaltic action of the bowels and *vice versa*. Diseases of the liver produce an irritable stomach, and even excite vomiting. Peritonitis occasions obstinate costiveness. The sympathies of these viscera are, in short, both intense and numerous, as might be inferred from the intimacy of their nervous connexions.

2. When the liver fails in transmitting the blood of the vena portæ, the circulation and specific functions of all the other portal viscera, are necessarily disordered. Among other maladies consequent upon this abdominal plethora, is ascites from increased serous exhalation.

3. When that organ fails to secrete or to excrete bile, the bowels can neither form healthy chyle, nor properly discharge their fœcal contents.

4. When the liver is perverted in its action, or greatly excited, it pours out a biliary fluid, vitiated in quality or re-

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dundant in quantity, the stomach and bowels are irritated, and vomiting and diarrhœa, or both, may be the consequence.

5. When the pancreas is enlarged, it sometimes occasions jaundice, by pressure on the common gall duct.

6. When the rectum is contracted, it produces intestinal torpor and remora.

A remark already made, in reference to the reciprocal influence of the thoracic and abdominal organs, is applicable to the morbid influences which the latter exert on each other—it is, perhaps, never in a single mode only. Thus, at the same time, that the diseased liver affects the stomach and bowels, by sympathy—that is, through the medium of the nervous system, producing an altered state of their sensibilities,—it pours into them excessive quantities of acrid bile, which, by its irritation, converts perverted excitability into perverted excitement.

IV. Reciprocal morbid influences of the lungs and heart.

a. The lungs, when diseased, disturb the actions of the heart—

1. By sympathy. These great organs are not more remarkable for juxta position, than harmony of action—a relation which could only be established and maintained by the agency of the nervous system. Hence the nerves of both organs are derived from a common plexus, and if either is disturbed in its sensibilities, the other, of necessity, sympathizes. An augmented action of the heart is, therefore, an invariable effect of inordinate pulmonary excitement.

But it is not through the instrumentality of their vital properties only, that diseases of the lungs occasion diseases of the heart. They operate in other modes which are more mechanical, and therefore, more obvious.

2. When, from any cause, the lungs fail properly to aereate the blood, the cavities of the left heart are filled with blood of a bad quality, which must, necessarily, disturb its healthy actions; but the greatest perverted influence is, perhaps, to be found in the admission of this kind of blood into the substance of the heart, through the coronary arteries.

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3. When the transmitting power of the lungs is impaired, the blood is necessarily accumulated in the right side of the heart and in the coronary veins, thus producing distension of its cavities and plethora of the vessels of its substance, with great consequent embarrassment of action.

4. In this state of coronary or cardiac plethora, increased serous exhalation may take place, from the internal surface of the pericardium, producing hydropericardii.

b. Diseases of the heart may excite diseases of the lungs in several ways.

1. By sympathy, on which I shall make no remarks.

2. By hypertrophy of the left ventricle diminishing its cavity, or ossification of the mitral or semilunar valves, interrupting the free admission of blood into and out of that cavity; all of which must, necessarily, embarrass the lungs, by impeding the transmission of blood through them.

3. By passive aneurism of the right ventricle of the heart, which being thus weakened, cannot send the blood into the pulmonary artery with sufficient force to secure its proper transmission through the lungs.

4. By active aneurism of the same ventricle, which gives it excess of power over the lungs, and may lead to pulmonary apoplexy, and other forms of sanguineous engorgement.

5. By enlargement of all the cavities of the heart, causing that organ to occupy more than its proper space, and, consequently, preventing the free expansion of the lungs, thus producing dyspnœa.

As in the case of the other organs, the heart seldom, perhaps, exerts itself, unfavourably, on the lungs, in one of these modes only. They are generally combined, though one member of the combination may far exceed the rest in efficiency.

I shall close with a few brief remarks. The human body is a piece of most complicated mechanism, and the assumption, that morbid actions are propagated through it, by any single principle, such as sympathy, or a *vis medicatrix*, must, forever, as it has done heretofore, prove fatal to the system of pathology into which it may be introduced. In every

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complex machine, if one of the component parts should fail in its office, some other will, of necessity, experience injury, and being crippled in its movements, may, ever, disturb the motion of several, until the irritation, by a kind of geometrical progression, is communicated to the whole. But in the living body, long before this takes place, from dependence of function, the parts most remote from that first injured, may be affected, and the whole system involved, in two other modes, examples of which I have already given; but may here refer to them again. Two tissues, each continuous with itself, pervade every part of the body—they are the nervous and the vascular. Of the nature of the agent which resides in the former, we know nothing; but observation teaches us that an impression made on a part, even the most circumscribed, provided the nerves leading to it are perfect, can be felt, in its effects throughout the whole system, even to the annihilation of its vital properties; and, that this phenomena is referable to the nervous system, is apparent, from the fact, that plants which are without a nervous system, at least any distinct tissue of that kind, cannot be *generally* affected by topical applications, and hence their diseases are mostly local and circumscribed.

The other universal tissue has an unquestionable agency in the production of general disease, although by many fashionable writers of the day, its influence is overlooked. Whoever has attentively examined the blood of a patient labouring under an inflammation, must have seen, even while the orifice was still bleeding, that it is by no means in a healthy state. A slate colored surface often begins to appear, at the very moment of its reception in the bowl, indicating, conclusively, that a decomposition into its proximate elements, had begun while it was still in the vessels and circulating through the organs. This, however, is but one of the changes, which it may have undergone, and inflammation is but one form of morbid action. We are, in fact, very far from knowing to what extent and in what manner, the blood may be vitiated in its qualities by the multitude of original morbid states, which may be established in the different organs;—for the colour of

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the fluid, and the peculiar chemistry which combines its numerous elements, render all researches into its condition exceedingly difficult, and quite uncertain in their results.—Nevertheless, we may be assured of the truth of these two assertions; first, that every local disease must change the qualities of the blood, which is made to circulate through the diseased part: Secondly, that this fluid carried into the other organs, must, necessarily, disturb their vital properties; and hence, that the circulating blood may be the means of awakening diseased organs in parts of the system very distant from that first affected.

(To be continued.)

ART. II.—*Some observations on Ulceration of the Kidneys, with cases*—By JOHN C. WARREN, M. D.

From the Boston Medical and Surgical Journal, No. 30.

The disease of ulceration of the kidneys is of not unfrequent occurrence. There is an obscurity in the symptoms of this distressing complaint, which causes it to be mistaken for diseases of the bladder, or of the urethra: and to the great distress and even destruction of the patient, the treatment is directed to the urethra or bladder instead of the real seat of the disease.

It is not in my power to dissipate the obscurity which involves the symptoms of this affection. But I have met with some cases in which the phenomena were observed with considerable care; and their causes afterwards verified by examination of the dead body. The publication of these will serve to call the attention of others to the subject; and lead to the discrimination of this obstinate complaint.

I will first state the case, and then add such remarks as they may suggest.

The first of these cases I visited in consultation with my friend, Dr. J. P. Spooner, to whom I am indebted for the history of the disease and dissection.

CASE 1. Mr. ————, æt. 29, in Feb., 1823, complained of passing bloody urine. This occurred in greater or less quantity every day—generally more in the evening than in the morning. Sometimes the urine was slightly tinged; at other times a few drops of blood followed the evacuation; at others again the whole quantity was deeply tinged, so that it had to him the appearance of pure blood. It was increased after drinking of vinous and spirituous liquors,—after indulgence at the table,—after long sitting, as he was in the

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habit of doing with his feet raised above the level of the chair,—after bodily or mental fatigue. Occasionally after long sitting, or after having passed a large quantity of urine, he felt a pain in the region of the kidneys. With the exception of some symptoms of dyspepsia, the bloody urine and an occasional pain in the small of his back, were all of his complaints. He was directed a cathartic of pil. aloes, and colocynth and calomel,—a spare diet,—the constant use of a decoction of uva ursi,—and tincture of sulphuric acid. For a short time his symptoms seemed to abate. As the spring opened, he took a journey to the south, which was of benefit to his general health, but was of no service to his particular difficulty. Through the summer he complained but little, but in the autumn he became worse. The urine was more uniformly bloody, he often passed large clots of blood, and began to appear emaciated.

The sulphate of copper and the acetate of lead were successively resorted to, but as they both disagreed with the stomach and bowels, their use was discontinued. In December two issues were made, one over each kidney. The effect of these issues was a sudden diminution in the quantity of urine and also in the quantity of blood; but a new symptom now appeared, viz., a pain following the discharge of urine. An apparent improvement in his condition continued for several months, with the exception of the pain just alluded to, which became more and more troublesome.

March 15th, 1824. My notes say he has had no discharge of blood for a fortnight, excepting a slight tinge this afternoon. Within the last week he has had a pain attack him in the right knee, which passed to the calf and thence to the knee of the other leg. His bowels are still liable to derangement from slight causes. The issues continue to discharge, although they are smaller than they have been. April 1st. As the painful affection left the knee the discharge of blood returned. The pain of passing urine is now extreme, and is often accompanied with tenesmus to such a degree that it sometimes produces involuntary discharge of the fæces; followed by shortness of breath. Bowels very irregular; countenance pale and emaciated. By the advice of some of his physicians he sailed to day for Richmond.

June 1st. Returned worse; dysuria increased; very much emaciated; constant dry cough; difficulty in respiration. Gave him squill pills, applied leeches over the publis, and on going to bed gave him an injection of flaxseed tea and laudanum.

This treatment afforded entire relief to his pulmonary complaints, and very much mitigated his other sufferings. The injection was continued nightly for a long time with much benefit. But as the summer advanced, his complaints became worse. Frequent vomitings, with severe paroxysms of pain, seized him, his legs became œdematous, and he was constantly troubled with a dribbling of urine, for which he was obliged to wear oiled silk bags made for the purpose. In September he made a short visit to Nahant. After his return, his

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situation was truly distressing. He would be seized several times in the course of an hour with excruciating pains, which seemed almost insupportable; his legs were painfully distended; and he rejected with distressing retching almost every thing he took. Nothing could be done for his relief. The injections of laudanum and flaxseed had lost most of their good effects, and there was this objection to them that they seemed to increase the irritibility of the stomach. At this time, whilst I was assisting him into bed, he was seized with one of his paroxysms. I immediately pressed upon the small of the back with all my strength, at the same time passing my hands up and down. This gave him instantaneous and entire relief. I continued with him through the night, and resorted to the same method whenever he had warning of an approaching paroxysm, and uniformly with relief.

From the time of his returning, (20th of Sept.) from Nahant, he was no longer able to attend to his business.

By rest from the active duties of life, and by resorting to the method just stated, his distress was much mitigated; but he gradually declined until he died, on the 17th October, 1824, being twenty months from the time of his first complaining.

After death an examination was made by Drs. Ware, Doane, and Wells. The right kidney was found very much enlarged, being twice the common size, and of an unusually light color; its consistence not much altered. The left kidney not much altered. The ureters were much distended. The bladder was very much diseased, being in a scirrhous state, in some parts an inch or more thick; its cavity of course much diminished. The state of the bladder accounted for the distressing paroxysms of pain which he suffered, and which resembled the severe pains of a woman in labor, more than any thing to which I could compare them. And the appearance of the bladder reminded me of what we may suppose that of the uterus to be soon after parturition. The mucous membrane of the stomach and intestines was also much inflamed. The distention of the ureters can be accounted for from the state of the bladder, which presented a mechanical obstruction to the passage of the urine. Whether the primary disease occurred in the bladder or kidneys, it seems impossible to determine. But from the order of the symptoms I have been inclined to refer it to the kidneys.

Case 2. This case I saw in consultation with Dr. William J. Walker, of Charlestown, who has had the goodness to favor me with a history of the case and to send me the diseased kidney. He has added two other cases of remarkable disease in this same organ.

Mr. L. Lincoln, a married man of excellent character, correct habits, forty years of age, by trade a sailmaker, and who had never been affected with any venereal complaints, applied to me, three years since, on account of a serious disease of the urinary organs. He informed me that this disease commenced about eight years before that

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time, and could not be ascribed to any palpable cause. At first he had frequent calls to pass urine, attended with a heat and itching about the orifice of the urethra and glans penis. This difficulty at first appeared to yield to the use of nitrous ether and laudanum, combined with mucilages. This relief was, however, only momentary, for the complaint returned in paroxysms, and gradually became more severe, until it destroyed the comfort, health, and finally the life of its victim. At the commencement of my attendance I noted the following symptoms. He was somewhat wasted in flesh; his countenance was anxious; his pulse and skin natural, except when suffering from a parozysm of pain. At this time he would sweat freely, yet his pulse would be but little altered from its healthy state. He was unable to retain his urine more than one or two hours, and never voided more than four to six ounces at a time. The urine was always clear, never deposited a sediment, never contained either blood, mucus or pus, and always appeared of a healthy straw color. He now had a constant pain at the end of the yard, and a sense of weight about the rectum, which frequently induced him to go to stool without effect. This symptom was not dependent upon piles, for on examination per anum, I detected no disease of the anus, rectum, or prostrate gland. His urine frequently stopped suddenly during its excretion. His paroxysms were preceded and attended by a diminished flow of urine, and his relief always attended by a more copious flow of this fluid. A sound introduced into the bladder came in contact with no stone. Yet when its point was directed to a certain part of the bladder, it produced a sensation of touching some substance harder than the coats of the bladder, but without the shock which is felt when the sound comes in contact with a stone. The introduction of the sound gave more pain than is usual with others, but its use, and even its free use, was not followed by protracted pain, bleeding, or any sensible change in the urine. From the difficulty of the dianosis, I was induced to use the sound and to vary its form more freely than I should have done had I known the state of the bladder as found on dissection. During his paroxysms of suffering he constantly complained of the most acute pain in the right inguinal region. This spot he said he could cover with the point of his finger. His gait was peculiar. He walked with his legs wide apart, swinging forward as it were first one side of the body and then the other, without flexing the limbs, so as not to jar the system. While walking, he usually had the right hand in his trowsers, holding the penis. His body was constantly inclined to the right side, and although in the prime of life he had the stoop forward, and every way the motions, of a man in the decrepitude of age. As the constitution of my patient was naturally good, his digestive organs in perfect state, except when interrupted by the most agonising pain; as he had no febrile symptoms, and as all his sufferings had reference to the urinary apparatus only, he received no treatment, save only such as might probably obviate or mitigate the sufferings which he endured.

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At the time of his greatest suffering he was three times bled by leeches. They were applied in considerable numbers to the perineum and the skin over the external abdominal ring. After each application he complained of more pain than ordinary, and said the bleeding hurt him. Of the truth of his suffering more for the leeching I am by no means certain; I am however, that it did him no good. Saline cathartics were of no service, if we except soda and Rochelle powders, when they did not prove too operative. Pyrola umbellata, uva ursi, gum Arabic decoctions of mucilaginous seeds, and mucilaginous drinks, generally gave some, yet but little relief. Nitrous ether, nitrous ether and oil of juniper, and bals. copavia, appeared sometimes of service, and sometimes worse than useless. Tonic medicines were always prejudicial. Fomentations, enemas, and all topical applications, failed of giving relief. Opium, belladonna, and conicum maculatum, did no other good than to relieve pain for the time. As to diet, stimulating food did harm. Tender succulent vegetables, farinaceous articles and ripe fruits, proved most friendly. He expressed great relief from the use of asparagus, berries, milk, &c. Whenever his suffering intermitted for a time, he would get a good appetite and increase in flesh; but a return of pain would soon reduce him to his former state.

Finally, worn down by pain, and despondent, he yielded himself to quackery, swallowed the infallible potions, and gave full credit to the last medicine used during a paroxysm, until a new period of pain convinced him of his mistake. A colliquative diarrhœa came on, which no medicine could restrain, and he died.

On opening the body I found no part diseased except the urinary organs. By removing the superjacent parts, the kidney appeared about four or five times its natural size; and the ureter, through its whole course as large as a man's thumb, was indurated, thickened, and apparently shortened. It was as it were stretched from one viscus to another, and might account for the constant inclination of the body to the right side. On removing the kidney and ureter from their natural situation, I found their cavities not materially enlarged. The increase of size arose from an increased thickness of the parenchymatious substance of the kidney and the coats of the ureter. The cavities of the kidney and ureter, were in a state of supporation. At this I was not a little surprised, as I have before stated that I had never detected in the urine either blood, pus or mucus. I at first thought that the ureter might be impervious, but by using the blowpipe, air passed readily into the bladder and to the kidneys. Here then we had an extensive suppurating cavity communicating with the bladder, and yet until within a few days of the patient's death no matter could be found in the urine. I say until within a few days of his death; for after my examination I learned of his wife that for the three or four last days of his life his urine looked as if a little milk had been mixed with it. Before that time I can answer that it did not exist, as I was in the habit of inspecting it frequently, and had

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enjoined it upon my patient to save for my own eye any thing deviating from a perfectly natural appearance in this excretion. Here sir let me ask, when did this suppuration commence! Within a few days of the patient's death? or at a much earlier period? Is it possible that so extensive a suppuration could have existed in these parts, and no matter be detected in the urine? and yet can it be possible that suppuration had not longer existed? considering the extent of disease, and the almost unequivocal marks of protracted ulceration and suppuration exhibited by the preparation now in your possession. On turning my attention to the bladder itself, I found its coats remarkably thin and weak, so much so that in endeavoring to separate it from the circumjacent cellular membrane, my fingers passed through into its cavity. In other cases of contraction of the size of the bladder, I believe the coats of this organ are thickened and strong; at least it has been so with all those cases which have come to my knowledge. The mucus membrane was changed from its natural appearance to a smooth substance, covered by minute granular shining points, which felt to the finger almost as hard as cartilage. The indulated part struck by the sound proved to be the end of the ureter where it enters the bladder. The sensation communicated to the fingers by touching this part of the bladder with the sound, the fact that the pain was principally in that place, and the difficulty of the diagnosis, led me to the belief that there might be a stone either impacted in the ureter or encysted in this part of the bladder. On viewing the smallness of the bladder and the tenuity of its coats, and reflecting on the freedom with which I had used the sound in this case, I could but be surprised that the point of this instrument had not done irreparable mischief.

Case 3. In the year 1815 I was requested by my preceptor and friend, (the late Governor Brooks) to examine a child of Mr. Calvin Turner, who had died of an immense tumor in the abdomen. The whole body, previous to any dissection, weighed twenty-seven pounds. Having laid open the abdomen, I found the tumor was one of the kidneys, which, when removed from its connexions, weighed fourteen pounds, being one pound more than the residue of the body. On opening this kidney, I found its upper extremity had degenerated into a firm white substance, almost cartilaginous, but becoming less white and less hard as it approached the middle part, where it had the color and natural appearance of the parenchymatous substance of the kidney in a natural state. The whole structure of this tumor resembled very nearly a natural kidney, allowance being made for its immense size. From its tubuli I pressed out urine having all the sensible properties of that fluid. Urine was also found in the pelvis of the kidney, and in the ureter. What the symptoms were which attended this case I cannot say, as I never saw the patient until I was called upon to make the dissection. I learned from Governor Brooks, however, that this was the third case of a similar disease which had

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occurred in his extensive practice, and that so little did the symptoms point to the precise nature of the disease, that in one case the spleen was supposed the part diseased, and in the other no satisfactory diagnosis could be formed till after dissection.

Case 4. About eleven years since I was requested to visit a Mr. Bailey, living in Tewksbury. The messenger who called on me, (himself a medical man,) wished me to go prepared to perform an operation upon a large tumor situated upon the patient's left side, and which was supposed to be a suppuration of the spleen. On arriving at my patient's house, I found a number of medical men who had convened to consult on the case, and to give assistance in any operation which might be deemed expedient. We found, by examining the side, a large tumor, which had the appearance of pointing in two different places. The one was near the margin of the false ribs, about four inches from the ensiform cartilage, and the other about four inches from the first in a line toward the posterior spinous process of the ileum. The skin over these points appeared reddish, and the parts thinner than at any other places. No one doubted that he felt fluctuation at these points, and even that fluctuation could be felt in the one by tapping on the other. The operation had been proposed to the patient by highly respectable gentlemen who had visited him previous to myself. All present thought it necessary. The patient and his wife ardently wished it done, expecting that a discharge of matter would give great relief. As the operation devolved upon me, and as I was at that time young in the profession, I went alone into my patient's room, that I might examine the case a little more carefully. This second thought proved fortunate for me, for by engaging the man in conversation, by altering his position in bed, by having his legs raised, while I made my investigations, and by similar manœuvres, I convinced myself that what appeared to be fluctuation might be only the slipping of a tumor under the parietes of the abdomen. Suspicion being roused, I pursued my inquiries until I was fully convinced that the safety of the surgeon as well as of the patient required forbearance. Perhaps the countenance of my patient, and his extreme emaciation, assisted me in the diagnosis. The countenance was that of a man laboring under incurable visceral disease; an appearance which I will not undertake to describe, but which the attentive observing practitioner will readily know, after having once seen it. I had now got myself into trouble, for the patient and his wife insisted on having the operation done, saying he could only die, and that this operation constituted his only hope. In addition to this, some of my medical friends could not give up their preconceived opinion. They quoted my words just given, that there was fluctuation in the tumor. Finally, with much difficulty, I persuaded my patient and friends that it might be better to wait two or three weeks and to have the opening made at that time, if he should still wish it, and if it should then appear feasible. Under

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these circumstances I left my patient, satisfied I had established a reputation for timidity, and equally satisfied that I had found in my composition so much of that better part of valor called discretion.

In a sdort time this man died. His body was examined by my much esteemed friend, Dr. Rufus Wyman. The tumor proved to be the kidney; was greatly enlarged; had formed no adhesions with the peritoneum opposite where it had pointed; was so soft in its texture that those present thought it contained a fluid until it was removed from the body and opened. This opening proved it to be of a soft spongy nature, and was thought by Dr. Wyman to be of the nature of fungus hæmatodes. This however was not all, for the colon, in a distended state, passed directly over the two projecting points, in such a manner as to have been infallibly opened by any incision into the tumor.

As this case had been attended by highly respectable practitioners, and as the urinary secretions and excretions had been so well performed as not to point out the parts diseased, may we not consider the following corollaries as established, viz., that great and even fatal disease may exist in the urinary apparatus, and yet not be discoverable by any known symptoms, and that a disease or irritation existing in one part of said apparatus, may produce symptoms of disease in any other part of the same.

Case 5. Charles E. Fessenden applied to me in the autumn of 1827. He had an inclination to pass water very frequently, with blood occasionally and a small quantity of mucous. The stream was rather small. I passed a bougie, and found an obstruction in the further part of the urethra. On two more applications this disappeared. He was not, however, relieved; nor did the medicines I afterwards gave, produce any mitigation of his symptoms. Satisfied that I should never be able to discover the nature of his complaint by the observations I could make in his occasional visits to me, I advised the young gentleman to go to the Hospital. The history of his case was there recorded as follows. Although long, I have not thought it best to omit any part of the history of the symptoms or treatment; as useful results may perhaps be drawn from them,—if not now, at some future time.

C. E. Fessenden, æt. 19, Boston. Entered the Hospital Dec. 3d, 1827. Constitution naturally good, but subject to frequent headache, and indigestion. Four months ago, received a severe strain in his back, from lifting a heavy weight. A fortnight after this, he began to feel a severe pain across the small of the back. After about a fortnight, this subsided, and was succeeded by a burning pain, about an inch from the extremity of the penis, coming on after micturition. Urine became darker colored than usual, depositing a mucous sediment. For the last three months has occasionally passed blood with his urine. Urine passed occasionally eighty times in the twenty-four hours, preventing his sleeping by the frequent necessity of rising.

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The pain in the back recurred about a fortnight before he entered the Hospital. Subject to costiveness.

Dec. 4. Warm bath every other day.

℞ Potass. sup. carb. ℥ij.
Aquæ, ℥vj.
Syrup. tolutan. ℥ iss.
Ol. junip. ℥ ss. M.
Cap. ℥ ss. ter in die.

May have meat; but no butter or fat.

6th. Sound passed, but no stone discovered in the bladder. Passed about a gill of blood.

℞ Sol. sulph magnes. ℥ iv.
Appl. hirud. vj. perineo, altern. diebus.

9th. Sound again passed, but no stone discovered.

Omitt. medicamenta.
Sum. pulv. uv. ursi, ʒ ij. ter in die.
Cap. pil. hyd. submur. et opii. nocte.

10th. Costive.

Sum. sol. mag. sulph. ℥ iv.

12th. Less pain after passing urine, and less frequent calls.—Pains across loins much diminished since entrance. Has passed but a few ounces of blood since the 5th.

Sum. sol. mag. sulph. ℥ ij. altern. diebus, mane.

17th. Improved every way. Warm bath only twice a week.

27th. General improvement. Mouth slightly affected. Less tickling about penis since entrance. Has a new sensation of burning just within the urethra and in the bladder before passing urine, relieved after evacuation. Passes urine four or five times daily; quantity as usual. Mucous sediment continues, but no blood for a considerable time.

Omitt. sol. mag. sulph.

Jan. 1. Doing well. Burning in penis and bladder, before passing urine, continues. No pain in any part. No blood.

Appl. hirud. bis in hebdomada.

14th. Mouth continues slightly sore.

18th.

Sum. pil. submur. et opii. bis in die.

25th. Calls to pass urine of late more frequent. For several days severe but momentary pain, in end of penis after passing water. Has to-day severe pain across small of back, chiefly before and after passing urine.

Omitt. uv. ursi et. pil.
Sum. balsam copaib. gtts. xxx. in aq. ter in die.
Continue bath.

28th. Has taken cold and looks less well. Pain in back, and pain after passing water continue. For several days has constantly passed blood with urine. Since balsam, quantity of urine diminished; more frequent calls. On the 26th, passed urine sixty times.

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Mucous sediment increased. Also burning in penis and bladder before passing urine. Ardor urinæ lately; none now.

Appl. empl. canth. iij. ad vj. dig. dorso.

30th. Better; has not taken the balsam very regularly. May walk out.

Appl. part. vesicat. unguent. junip.
Omitt. balsamum.

Feb. 2. Sharp aching pain near the extremity of the penis, commencing yesterday about 1, P. M. and lasting till 8 or 9. Very little burning pain in penis, and very little pain in back since blister was applied. None since yesterday morning. Less disturbed in night by necessity of passing urine. Urine in larger quantities. Sleep better than usual. Bowels regular.

3d. Pain in back recurred yesterday afternoon after a dinner of salt fish, and lasted about seven hours. Had a very uncomfortable night. Passed urine about four times. Severe pain after passing it; slight burning pain before; Urine scalding.

4th. Yesterday and last night more comfortable. Slight aching pain in penis for about an hour. Pain in back as on the day before.

5th.

℞. Pulv. uv. ursi, ʒj. ter in die.

6th. Less pain in back; recurred about three times in the day, lasting about fifteen minutes at a time. Burning pain for about half an hour after micturition. Urine diminished in quantity. Passed about eight times in the day; four times in the night. Pain before micturition less severe. Urine scalding. Bowels free.

8th. No recurrence of pain in back. Burning pain in penis as usual. Pain in extremity of penis before micturition. No pain last night after micturition. Slept well. Urine as usual. Pain for about two hours this morning; relieved by drinking slippery elm tea. This morning much increased by motion; this has not been the case before. Bowels free.

11th. Has continued to gain since the 6th. No recurrence of pain in the back. Pains in penis slight. Appetite good. Health good. Has lost in weight during the last fortnight, but never before.

12th. Passes urine eight times a day; four times in the night. Passes no blood. Mucous sediment rather less.

℞. Tinct. mur. ferri et ammon. gtts. xv. ter in die.
Sum. inf. lini. semin. ℥ ij. quarta quaque hora.
℞. Tinct. capsic. ʒ iv.
Tinct. canth. ʒ j. M.
Utet. pro lotione dorso.
Cont. baln. tepid. et uva ursi.

13th. Continues to improve. Has not now the sensation of weariness which he formerly experienced at night. Strength increases. Has gained flesh.

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14th. Continues to amend. Allowed, at request, to go out this evening.

16th. Feels much better than at any time since his entrance.—Urine passed about twenty times a day.

18th. Has been worse since the morning of the 16th. Pains increased. Urine passed more frequently, in smaller quantity, and with more sediment.

19th.

Omitt. omnia preter fotiones et balneum.

℞. sol. sulph. mag. ℥ iv.

20th. Much better this morning. Night very good. Twelve dejections from medicine, copious. Sharp burning pain yesterday after micturition, for about half an hour at a time. This is much increased, and is often brought on by motion. Severe itching pain this morning, lasting about half an hour at a time.

21st.

℞. Hyd. submur.

Pil. scillæ, aa gr. xij. M. Ft. pil. No. xij.

Cap. unam, mane et vespere. Cont cetera.

22d. Worse since yesterday's visit. Urine, according to report, somewhat tinged with blood; otherwise as before.

23d.

Omitt. pil. mane.

26th. Has been much worse since the 22d, to-day especially. Pains severe, recurring constantly upon exercise. Feeling of great weariness. Little appetite. Uneasiness, though not exactly pain, in the back. Pain in left groin, over a circular space of the size of a dollar, previous to passing urine. Bowels generally irregular when not under the influence of medicine. At present rather costive.

Omitt. hirud. applic.

Sum. pil. hyd. submur. mane et vespere.

27th. Last night and this morning much better. Takes daily a quart of the decoction of slippery elm.

28th. Much better.

March 1. Feverish.

℞. Spirit. æth. nitros. gtts. xl.

Quarta quaque hora. Cont. pil. hyd. submur.

℞. Acid. sulphur. ℥ij.

Ol. olivæ, ℥ij. M.

Appl. dorso pro linimento, mane et vespere.

3d. Pains have rather increased in consequence of his taking cold. Pain in the back for about half an hour yesterday. Passes urine about thirteen times in the night. Great weakness, especially at night.

4th. Urine passed twenty times in the night; in sufficient quantity, rather light colored, depositing some reddish flocculi. Vomited this morning after breakfast.

℞. Ant. tart. gr. x.

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Aquæ ℥ iij. M.

Cap. ℥ ss. semi horis, pro emetico.

6th. Pains increased on account of his eating salt, by which his symptoms are always exacerbated.

℞. Pulv. uv. ursi, ℈ ij. ter in die.

Cont. cetera.

7th. Much better.

8th. Tongue furred, and other symptoms of fever.

℞. Hyd. submur.

Pulv. jalapæ, aa gr. viij. M.

Cap. statim.—Omitt. medicament. solita.—Liquid diet.

10th. Was quite weak and in bed nearly all day on the 8th and yesterday. After dinner yesterday, was seized with vomiting, and paroxysms of violent pain ensued. Appearance under the paroxysms, and symptoms, were as follows:

Countenance very much distressed and pale; writhing in bed; scalding in urethra, as from a hot iron passed into it; excruciating pain in the end of the penis, and in the left testicle, descending from the symphysis pubis; itching in the penis within the perineum; pulse smaller than usual, not much accelerated; feet very cold; on examination, slight retraction of testicle, but otherwise the appearance natural. Pains came on immediately after passing urine. This attack continued about two hours, when he became relieved. A second paroxysm, similar to the former, commenced at 6, P. M.

During the first paroxysm he was directed by the house physician to take slippery elm tea, and continue this as long as the pain lasted. Fomentation of hops applied about the pubes, and kept hot. While this is preparing, foment with hot water. Enema of tepid flaxseed tea, half a pint, and laudanum, seventy-five drops.

Second paroxysm, opiate enema, tr. camph. opiat. gtts. xl.; spirit. æth. nit. gtts. xxx. M. In the evening, hop fomentation, with a strong decoction of poppies. At 9, spirit. æth. nit. gtts. xlv.; repeated at half past 11. At 2. A. M. tinc. opii. gtts. xxv.

This attack left him very feeble, and he continued in bed for two or three days, but had no severe pain, and gradually mended.

15th. Return to usual diet.

Cont. pil. mane et vespere.

17th. Countenance continues pallid. Passes urine about fifteen times in the night, with some clots of blood. Sediment somewhat increased.

19th. Passed a very comfortable night. Bladder again sounded. Passing the catheter into the bladder produced exquisite pain. Felt in the bladder, as he said, like a red hot iron.

Cap. pil. unam vespere.

Appl. empl. canth. dig. iv. abdomini.

24th. Complains of an itching about the anus, which he says he has experienced from the commencement of the disease. Has lost fourteen pounds of flesh within a fortnight.

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Diet,—for dinner, fish, oysters, broiled chicken; for breakfast, eggs, toasted bread, crackers, shells, cocoa or arrowroot.

Sum. pulv. uv. ursi, gr. xx. ter in die.

℞. Hyd. submur.
Camphoræ,
Opii. aa gr. vj. M. Ft. pil. No. vj.
Cujus, cap. unam vespere.

27th. Urine within the last twenty-four hours, eighty ounces.—Has gained strength.

Sum. uv. ursi, ʒj. ter in die.

28th. Severe pain in the lower part of the abdomen.

Appl. empl. canth. digit. iv. abdomini.

31st. Slight relief to abdominal pain from blister. Nights un easy.

Sum. vespere, ext. hyoscyami, gr. vj.

April 4. No effect from hyoscyamus.

Omitt. pil. hyos. et sum. pil. camph. et opii. gr. vj. nocte.

5th. Slept well. Took two pills.

6th. Recurrence of paroxysm similar to those of March 10th, and nearly as severe.

℞. Spirit. æth. nitros. ʒ ss.
Tr. oppi, ʒij. M.
Cujus cap. ʒj. quaque hora, ad allev. doloris.

7th.

Habet. baln. tepid. nocte.
Sum. sol. mag. sulph. ʒ iv. crass mane.

11th. Advised to lay aside the use of medicines, to go into the country as soon as he is able, have two issues on the back, and use no hard water. Have all his food boiled in soft water.

Upon the 12th, the weather being fine, and he thinking his strength sufficient to leave the Hospital, he was discharged. Some cause prevented his going that day, however, and on the 13th the paroxysms recurred a third time, with the additional symptom of pain in the back. Had an injection, from which two dejections, one copious.

14th.

Sum. inf. senn. comp. ʒ ij. et post horas sex, enema si opus sit. Si dolor redeat, appl. foment. tanacet. et absinth. parti affectæ.

℞. Spirit. æth. nitros. ʒ ss.
Ol. junip. gtts. xxx. M.
Cujus cap. gtts. xxx. tertia quaque hora.
Omitt. pil. hodie.

15th.

Si dolores. red. appl. empl. canth. dig. iv. ad vj.

16th. This morning in a state of stupor. Answers questions with difficulty, and incorrectly. Loss of memory. This state continued till eleven or twelve o'clock, when he recovered, and soon after left the Hospital.

In about three days after leaving the Hospital, he died.

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Examination April 24th, the day after death.

Slight adhesion of the omentum to the muscles on the left side. Left kidney considerably enlarged, with decided appearances of inflammation on exterior surface, covered with whitish spots, softer than natural. In the interior, appearances of inflammation much greater. Various ulcerations were discovered in the pelvis of the kidney, six or eight in number, and situated in the infundibula, and mamillary eminences. Ureter on this side enlarged to above four times the natural size, parietes very much thickened, and passage larger than natural. Right kidney larger than natural, with appearances of inflammation and spots of ulceration, but less than on the left side. Ureter enlarged. Bladder very small, its parietes much thickened; mucous coat of an ash color, with streaks of vermillion, and interspersed with numerous black dots. Prostate gland small, with no appearances of disease. Two singular appendages to the spleen, of the same substance with that organ, of the appearance of small lobes.

REMARKS.

On the last case I would remark, that when the patient first presented himself to me, I had a strong expectation of finding a stone in the bladder; his symptoms, as described to me, being very similar to those of the latter affection, with the exception of the sudden obstruction of the urine while passing, which he had not. When I attempted to pass an instrument, an obstruction presented itself in the membranous part of the urethra. This was removed in a few days without any mitigation of the symptoms, and the examination of the bladder was made, but no stone discovered. I then examined the prostate gland. This was found quite natural in feel, though smaller than usual. Having disposed of the suspicion of these complaints, I next directed my attention to the state of the urinary bladder. On examining externally, in different directions and situations, especially over the pubes, no tenderness could be discovered. There was however occasional pain above the pubes, a little to the left side; and the passage of an instrument into the bladder demonstrated an excessive tenderness in the internal coat of this organ. On repeated observations, I was not satisfied that an inflammation of the mucous membrane of the bladder in a patient of this age, could assume the obstinate character manifested by this complaint: and reflecting that the disease began with a violent pain in the back, I became satisfied that the original seat of it was the kidneys; and this inference was drawn perhaps as much from negative, as positive signs. The opinion was then stated to those who visited the patient with me.

On examination of the body after death, I proceeded in the first instance to the left kidney, which was as I had believed in a diseased state; though the extent of disease was much less than might be expected from such severe and fatal symptoms. The mucous coat of the bladder was clearly in a state of chronic inflammation; but its

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condition would by no means justify the suspicion of its being the principal seat of disease. We conclude that the disease of this young man began in the kidneys, and was the effect of an injury operating on a delicate and irritable habit.

When we consider the general aspect of the cases related, we must be struck at first view with the intensity of the symptoms. In this respect the affection does not correspond with the other derangements of these organs, so far as they have been discriminated. A sudden enlargement of the prostate gland, which sometimes takes place in middle aged persons, and might, in opposition to the chronic disease of old age, be called sub-acute inflammation of the prostate, is accompanied by most violent and distressing symptoms; but they are easily discriminated to be the symptoms of affection of this gland, and moreover, an examination will show the gland in a very uncommonly enlarged state. The existence of a stone in the bladder is also accompanied by very severe symptoms; but they may be distinguished from those of the disease of which we are speaking, by being less constant.

This character of intensity will therefore lead to a suspicion of affection of the kidneys.—From other diseases occurring in the urinary organs it may be distinguished also.

First. From structure in the urethra, by the want of pus in the urine in stricture; by the narrowness and obstinacy of the contraction; and by the great length of time usually required for the formation of the structure. It must be noticed, however, that in disease of the kidneys there is often a sympathetic contraction of the urethra, which misleads the surgeon to the opinion that the complaint is stricture. But in this case the contraction will be found to vary extremely, sometimes to disappear and afterwards show itself anew in its original state. There are frequently mistakes committed in examinations for structure. Many a patient has been subjected to the action of a caustic, because a plaster bougie would not pass; when if a metallic cathetre had been employed, the largest instrument would have freely entered the bladder. Before deciding on the nature of one of these cases, every kind of instrument should be employed, and at different periods.

Second. Disease of the kidneys may be distinguished from enlargement of the prostate gland by examination. To form a correct judgment in this case, the surgeon must be much in the habit of making examinations of this gland in its healthy and morbid state.

Third. From chronic inflammation of the bladder it will be extremely difficult to distinguish this affection of the kidneys. There is however, I suspect, reason to doubt whether chronic inflammation of the bladder does frequently occur as a primary disease. Perhaps it may be for want of observation, or from want of a sufficient number of dissections; but I do not recollect a case of chronic inflammation of the mucous membrane, as a primary and uncomplicated disease. In the cases of ulceration of the kidney, however, this coat

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has always exhibited signs of severe inflammation after death, and sometimes during life. A question may arise whether the inflammation of the mucous coat were a primary or secondary affection in the diseases of the kidney. I cannot doubt for a moment that the ulceration of the kidney is the original disease, and that the mucous coat is affected secondarily. The case of simple chronic inflammation of the mucous coat of the bladder, will be attended with symptoms less violent and less obstinate than the disease of which we are speaking. It might be thought that the pain in the back would serve to distinguish the affection of the kidneys from that of the bladder. But this pain is not so prominent a symptom as might be expected. In the case of Fessenden it scarcely existed except in the beginning of the disease.

Fourth. This disease will be distinguished from stone in the bladder by examination; and also by the sudden stop of the flow of urine, by the stone falling on the orifice of the urethra.

Symptoms of the disease. The disease sometimes begins with a pain in the back, but not uniformly. This is followed by an increased desire to pass water, which is done very often and in small quantities. As the disease advances this disposition becomes excessive, and much greater than what is known in other affections of these parts, frequently more than sixty times in twenty-four hours. The urine is slightly tinged with blood, and mixed with mucous. This mucous is afterwards purulent; or rather there is a mixture of blood and foul pus in variable proportions, sometimes the one and sometimes the other predominating. The pain is often excessive. Sometimes it is in the course of the urethra, accompanied by a violent burning; sometimes in the extremity of the penis as in the stone, and frequently in the lower part of the abdomen, in the middle or one side. The passage of an instrument into the bladder produces great pain. The pulse is accelerated, and tongue furred, though in a changeable manner. Sometimes there are regular paroxysms of fever, preceded by chills. The constitution becomes greatly disabled. Exhalations take place in the cellular membrane. The nervous system is disturbed. Under these distressing symptoms the patient survives for a considerable time.

Treatment. Whether this disease is ever curable I know not. I have a patient who has been ill three years, and for some time lay in a hopeless condition. He is now able to walk, ride, eat and drink, as usual; yet I cannot say he is well.—In the beginning of the complaint it would be proper to take blood from the arm, afterwards to apply leeches frequently to the loins and the perineum. The warm bath is useful. Mucilaginous injections into the rectum, with the addition of tincture of opium, when the pain is severe. Deep issues should be made with caustic, on each side of the spine; or on one side only if the disease seems to be confined to one kidney. Mucilaginous drinks, especially decoction of flaxseed, drank very copiously, give more direct ease than any other remedies taken into the

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stomach; for in general, medicines passed through the stomach appear to have no great influence on the complaint. All stimulants are injurious. The balsams therefore do harm Injections into the bladder, however mild, are pernicious. The patient's regimen should be of the mildest kind; he should avoid the use of spring water, and employ only pure water, either distilled or rain water. Finally, the symptoms must be mitigated by the constant use of opium. Hyoscyamus, stramonium and hemlock, do not appear to be substitutes for this medicine.

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ART. III.—1. *An Exposition of the Natural System of the Nerves of the Human Body. With a Republication of the Papers delivered to the Royal Society, on the Subject of the Nerves. By Charles Bell, Professor of Anatomy and Surgery to the Royal College of Surgeons, &c. &c.* London. 1824.

2. *Appendix to the Papers on the Nerves, republished from the Royal Society's Transactions. By Charles Bell. Containing Consultations and Cases illustrative of the Facts announced in these Papers.* London. Longman & Co. 1827.

The Edinburgh Review for May, 1828, contains a long and elaborate article on the discoveries of Mr. Charles Bell; omitting its more declamatory parts, we present our readers with that portion which sets forth the nature and extent of those discoveries.—ED.

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It is singular enough that this happy conjecture of so extraordinary a man should have been entirely overlooked, until the proofs of its truth were brought forward in Mr. Bell's experiments in 1809; for examples of diseases were daily occurring, in which sensation or motion were *separately* lost; and the mere condition of sleep showed the suspension of one set of nervous offices, and the continuance of others,—whilst the actual division of a nerve going to the extremities, took away both motion and sensation. That there were some nerves merely for sensation, and some only for motion, was, however, generally discredited, at least up to the time of Haller. If motion was lost without there being also loss of sensation, the reason was, according to Haller himself, that sensation could exist with less remaining strength than motion could! and the condition of the dying, who lost the power of moving before the power of feeling left them, was adduced as an example. This notion was allied to, if not absolutely identical with, the hypothesis of the nervous action in motion and sensation being, in kind, precisely the same, and differing only *in force*. Of those who admitted the possibility of one nerve containing distinct fibres for each of these two offices, some supposed that the conducting faculty, with relation to external and internal impressions, resided in a different substance, as that of internal impressions in the medullary, that of external impressions in the neurilemma; but many were indisposed to acknowledge the necessity for that which they conceived might be regulated in the brain

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or nervous centre, and for which the fibres of the nerves exhibited no visible preparation. It was urged also, that as muscular fibres could be contracted in opposite directions, so in like manner might the fibres of the same nerves convey impressions from within outwards, and from without inwards. We may here remark the curious mistake of the elder anatomists concerning the ganglions, a matter on which they affected a particular exactness, and concerning which, for the most part, they agreed. They thought the proper office of the ganglions was *to cut off* sensation from the portion of the nerve below it; it will presently be seen that the truth is diametrically opposite; and that Mr. Bell has shown all nerves of sensation to be provided with and distinguished by a ganglion.

While these obscurities continued to beset the functions of sensation and motion, there was naturally no great accord among physiologists concerning what they choose to call vitality, and animality, or concerning the distinct offices of the cerebrum and the cerebellum, or the difference between nerves of voluntary and involuntary muscular motion. The spinal marrow was considered as a simple chord, medullary without, cineritious within, giving origin to the nerves; and the curious interoostal, or sympathetic system, was sometimes asserted to be the centre of organic, nutritive, or automatic life, and sometimes regarded as hardly more than an elaborate contrivance for the propagation of sympathies among all parts of the body; between the intellect and the stomach, between the body and the mind, between one side of the body and the other, and interchangeably among all the separate organs.

Such, so vague, so obscure, so inexact, so unsatisfactory, was the kind of knowledge communicated to the student, until a very recent period; and the impression left by it was, that of confused and unintelligible profusion in the distribution of nerves, of intricacy without meaning, of an expenditure of resources without a parallel in the other works of nature. But no small part of this confusion is now made clear; what seemed to be profusion, has been shown to be a provision equally wise and economical for the perfect performance and combination of the most important and distinguishing functions of living creatures. We do not mean to speak here of the proposed location of different mental faculties in different parts of the brain, an idea which the Arabians held in their schools, and which, with many additions, has lately excited so much attention, because that theory has not yet been subjected to the kind of investigation by which its truth must finally be judged. It can hardly be said to admit of experiment, and pathological facts have scarcely yet been viewed in connexion with it. It must be confessed, indeed, that the structure and uses of the brain itself, of its eminences, cavities, divisions, and junctions, are yet among the things least understood, and still remain to be explained by some living, or some future physiologist; and many ingenious hypotheses will doubtless arise and fall, before conjecture points with any certainty to the reason of all

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the forms and modifications of the cerebral substance. Minute observaton of structure, and the cautious investigation of morbid phenomena, must be chiefly depended on for the elucidation of these circumstances, for here also experiment can seldom, perhaps never, be applied in aid of them. But discoveries of the highest value *have been made* in all that relates to the origins and functions of the Nerves themselves, arising from portions of the cerebrum, and from the spinal marrow; and have sprung so legitimately from anatomical investigation, have been so judiciously and so clearly illustrated by experiment, and so supported by observation of cases of disease, as to have laid a foundation, which may be enlarged or strengthened by the future progress of science, but can never be shaken or rendered insecure. Of these discoveries, so difficult in their nature, and in their practical, as well as philosophical consequences so important, the works of which the titles are prefixed to the present article, present abundant evidence, that the chief honor belongs to Mr. Charles Bell.

Previous to the publication of his Exposition of the Natural System of the Nerves, several eminent physiologists had instituted researches into different parts of this system; but the results had been less satisfactory than might have been expected from the zeal and intelligence with which they were conducted. We would by no means speak slightingly of labours most honorable to those engaged in them; yet, assuredly, it is embarrassing to those who, not being practical physiologists themselves, humbly await the discoveries of those who are, to find, after reading no small number of volumes, including the details of innumerable experiments, that by one the ganglions were looked upon as so many little brains, between which the great intercostal, or sympathetic nerve, was the chain of communication for interior life, while others considered them as cutting off the course of sensation; that by one the power of the heart, stomach, and intestines, was wholly ascribed to the spinal marrow, and by another stated to be quite independent of it; that by one the secretions were placed under the agency of the nerves, and by the experiment of another shown to be very little influenced by them.

Mr. Bell's researches have been directed more exclusively to the principles of a just and natural arrangement of the nerves, called cerebral and spinal, and to the investigation of their particular offices; and in the progress of them he has established facts, analogies and classifications, of singular value and interest.

The history of these scientific labours presents so instructive an example of the means of establishing presumed truths, and has, moreover, so much connexion with certain consequences of another kind, which we shall have to notice, that we must begin our review of what he has done for this department of anatomy and physiology, by reverting to a pamphlet circulated by him among his friends so long ago as in the year 1809, and entitled, "Idea of a new Anatomy of the Brain." In justice, it ought to be stated, that this pam-

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phlet was never published; but was distributed among Mr. Bell's friends, for the professed purpose of eliciting objections to the course of study which he found himself then taking, and which he foresaw would, in all probability, employ the better part of his life. He wished either to be encouraged, or to be convinced that he was wrong; and notwithstanding that it contains more than the rudiments of those discoveries which we have now to explain, it seems to have excited very little attention; and twelve years of unassisted labour elapsed before Mr. Bell appeared before the public. During all that time, however, he was engaged in teaching, and each year in which he came to the discussion of nerves, was marked by improvement. An opinion then prevailed, and is probably not yet quite extinct, that the different sensations conveyed by different nerves, resulted solely from the *superior delicacy* of one set of them above the other. If the optic nerve conveyed sensations of light and colour, this was only because its terminations were, of all nervous expansions, the finest and most minute. One answer may perhaps suffice for this extravagant hypothesis. If varieties of sensation depended on gradations of nervous subtlety, any decrease in this quality would produce not the impairment of the sensation usually conveyed by the nerve so affected, but a substitution of another sense in lieu of it. If the nerve of sight was so affected, the eye would be metamorphosed into the organ of hearing or of simple touch; or in other circumstances, the sense of hearing might degenerate into that of taste. But the truth is, that the theory has no foundation in fact: for the tenuity of expansion of the nerves of hearing, or taste, or touch, has never been proved to be less delicate than that of sight itself; and however varied the impulse or agent affecting a nerve, the impression always takes its character from that of the nerve itself. Mr. Bell, however, soon applied himself to the correction of more formidable errors: and attacking the common opinion, that a separate sensation and volition are conveyed by the same nerves, he asserted the functions of different parts of the cerebrum and cerebellum, and maintained that a great part of the nerves were not single nerves possessing various powers, but bundles of different nerves, the filaments of which were united for the convenience of distribution, but yet as distinct in their office as in their origin; that the perception or idea depended on the part of the brain to which the nerve was attached; and that the matter of the nerves of the external organs of sense was adapted to the reception of certain impressions only: further, "That the nerves of sense, the nerves of motion, and the vital nerves, are distinct through their whole course, though they seem sometimes united in one bundle; and that they depend for their attributes on the organs of the brain, to which they are severally attached."

We find Mr. Bell strongly insisting, in this pamphlet, on the complete distinctness of the cerebrum and cerebellum; and pointing out the distinction, (which afterwards led him to other distinctions of

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great moment,) that although the two hemispheres of the brain were so like in form and substance, and so united by tracts of medullary matter, as to make consentaneousness of office both probable and easy, the cerebrum and cerebellum were, on the contrary, very different both in form and arrangement, and but slightly and indirectly connected; adducing facts at the same time which showed that these parts might be separately affected; and, finally, deducing from these observations the conclusion of their being distinct in office. This conclusion was strengthened by reference to the varying proportions of the cerebrum and cerebellum in different classes of animals, the diversity of the former in creatures differently endowed, and the general permanency of character in the latter. It is of much consequence, as will hereafter be evident, to quote in this place Mr. Bell's own description of his attempts to prove by experiment what he had succeeded in making so probable by reasoning:—

"I took this view of the subject. The *medulla spinalis* has a central division, and also a distinction into anterior and posterior fasciculi, corresponding with the anterior and posterior portions of the brain. Further, we can trace down the crura of the *cerebrum* into the anterior fasciculus of the spinal marrow, and the crura of the *cerebellum* into the posterior fasciculus. I thought that here I might have an opportunity of touching the *cerebellum*, as it were, through the posterior portion of the spinal marrow, and the cerebrum by the anterior portion. To this end I made experiments, which, though they were not conclusive, encouraged me in the view I had taken.

'I found that injury done to the *anterior* portion of the spinal marrow convulsed the animal more certainly than injury done to the posterior portion; but I found it difficult to make the experiment, without injuring both portions.

'Next, considering that the spinal nerves have a *double* root, and being of opinion that the properties of the nerves are derived from their connexions with the parts of the brain, I thought that I had an opportunity of putting my opinion to the test of experiment, and of proving at the same time, that nerves of different endowments were in the same cord, and held together by the same sheath.

'On laying bare the roots of the spinal nerves, I found that I could cut across the posterior fasciculus of nerves, which took its origin from the posterior portion of the spinal marrow, without convulsing the muscles of the back; but that on touching the anterior fasciculus with the point of the knife, the muscles of the back were immediately convulsed.

'Such were my reasons for concluding that the cerebrum and the cerebellum were parts distinct in function, and that every nerve possessing a double function, obtained that by having a double root. I now saw the meaning of the double connexion of the nerves with the spinal marrow; and also the cause of that seeming intricacy in the

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connexions of the nerves throughout their course, which were not double at their origins.

'The spinal nerves being double, and having their roots in the spinal marrow, of which a portion comes from the cerebrum, and a portion from the cerebellum, they convey the attributes of both grand divisions of the brain to every part; and therefore the distribution of such nerves is simple, one nerve supplying its destined part. But the nerves which come directly from the brain, come from parts of the brain which vary in operation; and in order to bestow different qualities on the parts to which the nerves are distributed, two or more nerves must be united in their course or at their final destination.—Hence it is, that the first nerve must have branches of the fifth united with it: hence the *portio dura* of the seventh pervades everywhere the bones of the cranium to unite with the extended branches of the fifth: hence the union of the third and fifth in the orbit: hence the ninth and fifth are both sent to the tongue: hence it is, in short, that no part is sufficiently supplied by one single nerve, unless that nerve be a nerve of the spinal marrow, and have a double root, a connexion (however remotely) with both the cerebrum and cerebellum.'

In this passage we see laid open the very foundation of all Mr. Bell's important discoveries relating to the functions of the nerves: it being perfectly clear that he was then aware of the distinct offices of the anterior and posterior portions of the spinal marrow; and that the nerves arising from its anterior part were for Motion, and those of the posterior were for Sensation, or for some other office; for there was much difficulty in proving the latter circumstance by direct experiments, in consequence of the general shock communicated; but the fact was afterwards proved by experiments made on the functions of the fifth nerve. It is no less clear that Mr. Bell then understood that the nerves proceeding from the brain had each but a single function, and required to be united with some other nerve when a double function was to be effected: and although it was in consequence of these investigations, and from the discovery of this general principle of combination of separate nerves for combined offices, that he was led to the understanding of the extensive system of nerves connected with the complicated actions of respiration; yet this *is* precisely the part of Mr. Bell's labours, concerning which justice has been most withheld from him. His incontestable discovery of the distinct functions of the spinal nerves has been claimed by others; and those who seem most disposed to pronounce fairly on this matter in another country, where the claim has been most directly advanced, and would at least allow Mr. Bell a share of the merit of priority, rest his title to it, curiously enough, on the *probability* of his having been naturally led to the discovery *by* his researches into the system of the respiratory nerves; whereas the truth is, that these researches, with all their consequences, were *the result* and *not the cause*, of his having discovered the principle on which the spinal nerves of motion and sensation were

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distributed. It was, beyond all question, by the light of this principle that he was directed to the conclusion, that the nerves of an organ were complex only because its functions were complicated. Putting aside the mere evidence of dates, there is proof enough of Mr. Bell being the first discoverer, from the course of his progress. We see, first, the observation of structure, leading him to infer the distinct functions of the different roots of the spinal nerves; and then the inconvenience of the experiments directly proving it, causing him to trace analogical double structure in some of the cerebral nerves, and to select the fifth, of which he succeeded in showing the double office. Subsequently to this, we observe him still seeing more nerves sent to parts already supplied with nerves both of motion and sensation, and led to investigate their uses; and finally, by experiment, by comparative anatomy, and pathological phenomena, ascertaining the separate and *superadded* system of respiratory nerves, so denominated by him with an obvious reference to the previously ascertained nature of the *regular* nerves of sensation and of motion. Every step of this process is plain and orderly, and it would be difficult to find a more admirable example of useful discovery philosophically attained. It is enough, for the present, to have pointed out the singular perversity of fortune by which Mr. Bell's persevering and patient pursuit of a great principle, and his meritorious abstinence from premature assertion, had almost deprived him of the credit which so truly belongs to him.

Although, from circumstances, it has become necessary to trace Mr. Bell's discoveries back to this pamphlet, it is proper to remark, that the observations on the brain and the roots of the nerves, were not the commencement of his labours. It was the seeming *complication* in the course of the nerves, as they wander over the head, the neck, and the chest, that first led him to this investigation.—When he was directing our attention to the columns of the spinal marrow, and the double roots of the nerves, he was in fact explaining that intricacy, which he found in the distribution of the nerves, and which had met him each time he returned to the demonstration of the subject in his public lectures. So that he has, in fact, arrived at his conclusions by two different paths,—1st, by observing the distribution and relation of the nerves in their remote extremities; and, 2d, by observing the columns of the brain and spinal marrow, and the origins of the nerves from these columns.

Before following the order of Mr. Bell's papers, it may facilitate the comprehension of the whole subject to state, as he himself has done in his preliminary observations, that according to the views he takes of the nerves of the human body, there are, besides the nerves of vision, smell, and hearing, *four* different systems of nerves distributed through the body; those, namely, of Sensation, of Voluntary Motion, of Respiratory Motion, and those which, neither communicating sensation in the ordinary meaning of that term, nor conveying the volition which directs voluntary motion, nor yet respiratory,

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unite the body into a whole, and are essential to Nutrition, to growth, to decay, and generally to animal existence. The nerves of these separate functions are undistinguishable by their structure, but known by their origins, they are sometimes separate in their course, sometimes bound together in one sheath; but never, as had been formerly supposed, confounded in office. They are divided into simple nerves and compound; the first having their roots arising in a line, or sequence, from the brain or spinal marrow, as seen in the ninth nerve; the roots of the second arising in *double* rows, each row from a *different* column or tract of nervous matter, as exemplified in the nerves arising from the spinal marrow.

'If we were successfully to trace a nervous cord, (we shall suppose from a muscle of the fore-arm,) it would be found a simple filament, thread, or funiculus. We should then trace it into a compound nerve; perhaps the ulnar nerve, which we call compound, because there are in it filaments of motion, and filaments of sensation bound together. At the root of the auxiliary nerve we should trace it into the composition of a fascis, where it forms the anterior root of a spinal nerve. Being further traced, it would merge in the anterior column of the spinal marrow; and traced into the base of the brain, it might be followed as a *tractus*, a streak of matter distinguishable from the surrounding substance, until it was seen to disperse and lose itself in the cineritious matter of the cerebrum. In all this extent, however combined or bound up, it constitutes one organ, and ministers to one function, the direction of the activity of a muscle of the hand or finger. Even in this respect its operation is not perfectly simple, for while it excites the muscle to change its state, which we call its state of contraction or of relaxation, it also conveys to the sensorium a sense of the condition of that muscle.

'And so, if we trace other fasciculi, or rather filaments, whether they be for the purpose of sensation or of motion, each retains its office from one extremity to the other; nor is there any communication betwixt them, or any interchange of powers, further than that a minute filament may be found combined with filaments of a different kind, affording a new property to the nerve thus constituted.'

Mr. Bell describes the spinal marrow as being composed in reality of six columns, or three in each lateral portion; an *anterior* column, which is for the function of Voluntary Motion, and may be traced into the substance of the brain; a *posterior* column for Sensation, and a third, or lateral, column, between the anterior and posterior columns, and which is for the Respiratory functions. The existence of this last had been pointed out by other anatomists; but Mr. Bell was the first clearly to describe it, or to point out its peculiar use. Each of these columns has subdivisions, not yet explained. This arrangement of the spinal marrow prevails in all the vertebrated animals; and is indispensable to the association and combination

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of all the movements connected with the act of respiration in those possessing a thorax capable of respiratory motions.

To speak first of the *regular* nerves, there are of these thirty sent out from the spinal marrow on each side; and each of these has two distinct roots, one from the anterior and one from the posterior column. The *posterior* root of each is distinguished by a ganglion, situated where it is surrounded by the sheath of the spinal marrow, and before its junction with the anterior root. Seeing this great regularity of the spinal nerves, and the very great irregularity of the cerebral nerves, Mr. Bell was led to inquire into the reason of so remarkable a contrast; whether, first, the double office of these nerves depended on their having double roots; and whether this was the cause of their peculiar simplicity of arrangement: and, secondly, what cerebral nerves, in their distribution to the head and face, had similar offices.

'It was necessary to know, in the first place, whether the phenomena exhibited on injuring the *separate* roots of the spinal nerves correspoded with what was suggested by their anatomy. After delaying long on account of the unpleasant nature of the operation, I opened the spinal canal of a rabbit, and cut the posterior roots of the nerves of the lower extremity; the creature crawled, but I was deterred from repeating the experiment by the protracted cruelty of the dissection. I reflected, that an experiment would be satisfactory, if done on an animal recently knocked down and insensible; that whilst I experimented on a living animal, there might be a trembling or action exerted in the muscles by touching a sensitive nerve, which motion it would be difficult to distinguish from that produced more immediately through the influence of the motor nerves. I, therefore, struck a rabbit behind the ear, so as to deprive it of sensibility by the concussion, and then exposed the spinal marrow. On irritating the posterior roots of the nerve, I could perceive no motion consequent, on any part of the muscular frame; but on irritating the anterior roots of the nerve, at each touch of the forceps there was a corresponding motion of the muscles to which the nerve was distributed. These experiments satisfied me that the different roots and different columns from whence those roots arose, were devoted to distinct offices, and that the notions drawn from the anatomy were correct.

'The anterior roots of the spinal nerves, and the anterior column of the spinal marrow, being thus shown to have a power over the muscular system, the next step of the inquiry was distinctly indicated. If I pursue the tract of the anterior column of the spinal marrow up into the brain, shall I find the nerves which arise from it to be muscular nerves? An anatomist will at once answer, that only muscular nerves arise in this line.'

Mr. Bell's descriptions are materially aided by drawings and plans; but those who are acquainted with anatomy will remember,

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that on tracing up the anterior column of the spinal marrow into the corpus pyramidale, the ninth nerve is found to arise from it, having *one* series of roots only, corresponding with the anterior roots of the spinal nerves, and that this nerve is a nerve of Motion, entirely devoted to the muscles of the tongue, and unconnected with the sense of taste. Higher up, arising from the same *tractus motorius*, is the sixth nerve, a muscular nerve of the eye; and higher still, tracing the tractus through the Pons Varolii, are the roots of the third nerve, the motor nerve of the eye. These interesting points being ascertained, it remained to be seen whether the posterior column of the spinal marrow, and the roots proceeding from it, were for sensation. Pursuing this inquiry, it was found that the fifth nerve the sole nerve of sensation in the head and face; and it was thence understood why there was no necessity for the third, sixth, and ninth nerves having a posterior or ganglionic root. Thus far the fifth nerve agreed with the spinal nerves in bestowing sensation: It then became a question whether it had a further resemblance to them, and comparisons being instituted, both in man and in brutes, of the anatomy of this nerve and of the spinal nerves, a remarkable similarity was discovered. It was seen, like the spinal nerves, to have *a double root*, the anterior root passing the ganglion, and the posterior falling into the ganglion; and on following back the anterior root, it was observed to come out between the *funes* of the pons varolii, and, in fact, from the crus of the cerebrum. And as the anterior portion of the nerve did not enter the ganglion, Mr. Bell conceived it to be, in fact, the uppermost nerve of the spine, the uppermost of that series of nerves which are both for motion and for sensation. To ascertain the correctness of this conclusion, the nerve was exposed at its root, in an ass just killed, and being irritated, 'the muscles of the jaw acted, and the jaw closed with a snap.' The nerve was next divided in a living animal, and the jaw was found to fall.—These experiments left the functions of the nerve no longer a matter of doubt, and proved it to be both a muscular nerve and a nerve of sensibility; in short, to be, for the head, what the spinal nerves are for the other parts of the body.

The *regular* nerves, then, are the seven cervical, the twelve dorsal, the five lumbar, the six sacral, the sub-occipital, and the fifth pair, and all these nerves, which are for sensation and motion, are *double* in their origin; and they are common to all animals, 'from the worm up to man.' The *irregular* nerves, so designated from the irregularity of their distribution, have *a single* root, and are superadded to those just spoken of, according to the complication of organs for which they are intended; such are the third, fourth, and sixth nerves going to the eye; the seventh, to the face; the ninth, to the tongue; the glossopharyngal, to the pharynx; the nervus vagus, to the larynx, heart, lungs, and stomach; the phrenic, to the diaphragm; the spinal accessory, to the muscles of the shoulder; and what Mr. Bell has named the External Respiratory, a nerve resem-

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bling the phrenic of its origin, but sent to the outside of the chest, to the serratus magnus muscle, which muscle is also supplied from the regular system of nerves All these irregular nerves are, we have said, using Mr. Bell's words, *superadded*, and for superadded organs; and this superaddition of organs he has shown to be such as are connected with the apparatus of respiration, and the variety of offices for which this apparatus is prepared in the higher animals. It is this explanation which gives clearness to a piece of anatomy, formerly of all the most difficult and confused, and which enables us to account for the apparent prodigality, for the countless ramifications, for the numerous connexions of the nerves of the face, neck, and chest; more particularly of the fifth and seventh nerves with the ninth, and with the cervical and phrenic nerves.

The motions connected with respiration, although chiefly seen in the neck, trunk, and face, extend almost all over the body, to some hundred muscles, as is evident during any of the more violent respiratory efforts. Here, then, are new motions, differing wholly from those of which the end is locomotion, and no less from the voluntary motions, and therefore presumably requiring a new source of nervous energy. Of these motions, some are well known to be under the command of the will, others carried on independently of the will, and not to be controlled for any long time by the strongest effort of volition, but still carried on by the same muscles, both when we will, and when we do not. Thus we breathe during sleep without volition, and yet we can use the respiratory muscles as voluntary muscles in violent exertions, or in singing. Hence there is an evident necessity for *a combination* of powers; and from this combination arises a necessary degree of complexity in the system of nerves connected with those powers. Mr. Bell has illustrated this very clearly:—

'Let us observe, in the act of eating and swallowing, the necessary combination of the three powers of sensation, voluntary muscular activity, and the act of the respiratory muscles. If we cut the division of the fifth nerve which goes to the lips of an ass, we deprive the lips of sensibility; so when the animal presses the lips to the ground, and against the oats lying there, it does not feel them; and consequently there is no effort made to gather them. If, on the other hand, we cut the seventh nerve where it goes to the lips, the animal feels the oats, but it can make no effort to gather them, the power of muscular motion being cut off by the division of the nerve. Thus we perceive that in feeding, just as in gathering any thing with the hand, the feeling directs the effort, and two properties of the nervous system are necessary to a very simple action.

'In drinking, the fluid is sucked in by the breath, and when the mouth is full we swallow. The water is felt; the lips are moulded into the right form by volition, and the muscles of inspiration combine to draw in the fluid. In the act of swallowing, the liquid

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would descend into the windpipe, were there not a combination of the muscles of respiration with the apparatus of deglutition to prevent it; nor could the fluid or the solid morsel pass the diaphragm without a similar coincidence of activity and relaxation betwixt parts animated by different systems of nerves.

'In speaking, it is still more obvious that the act of respiration must become voluntary, in order to push out the breath in combination with the contractions of the larynx, and tongue and lips, for producing sound, and more especially articulate language.

'The respiratory system must be exercised under an instinctive and involuntary impulse, as in breathing during sleep and insensibility. But it must, at certain times, be associated into voluntary actions. By foreseeing this difficulty, we shall avoid the danger of pushing the investigation of the anatomy too far, or of throwing a doubt over important discoveries by attempting too much.'

It was fortunate for Mr. Bell's investigations, that the face was a part of the body in which the nerves of voluntary motion and of sensation, which in other parts of the frame ran their course bound up together, were distinctly and separately distributed, coming out from the cranium through separate openings, and meeting only in their terminations. This arrangement enabled him to make those decisive experiments to which we have already alluded.

We have before said that our author had contrasted the spinal nerves, which are remarkable for their regularity, with the nerves of the brain, which are irregular both in their origin and course. The former arise uniformly from prolonged tracts of medullary matter, and have each *two* roots and a ganglion upon one, and they are distributed universally over the body. The nerves of the brain arise from distinct parts, and their roots are *single*, with the exception of one, which is the fifth. We find that this has *two* distinct origins, and also a ganglion upon one of them—that it corresponds, in fact, with the extensive class of spinal nerves. Here there is a remarkable circumstance demanding explanation: when we find a spinal nerve introduced in the midst of so many others, it points out distinctly that the spinal nerves must have some peculiarity of function. The fifth nerve was found, accordingly, to be both a nerve of motion and of sensibility, as all the spinal nerves are. But the question then arose, what necessity is there for another nerve of motion being supplied to the muscles of the face, where the fifth is already distributed? This can only be answered by attending to the peculiar functions performed by these muscles, and observing how they are connected with the complex actions of respiration, as may be seen in simple breathing, or speaking, and expression. It would thus appear that the fifth pair is not suited for controlling these actions, but that a new nerve having a different origin from the brain is required. All these circumstances being considered, Mr. Bell was prepared to decide by experiment whether the fifth and seventh

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afforded a double supply of the same kind of endowment, or performed different offices.

'An ass being thrown, and its nostrils confined for a few seconds, so as to make it pant and forcibly dilate the nostrils at each inspiration, the portio dura was divided on one side of the head; the motion of the nostril of the same side instantly ceased, while the other nostril continued to expand and contract in unison with the motions of the chest.

'On the division of the nerve, the animal gave no sign of pain; there was no struggle nor effort made when it was cut across.

'The animal being untied, and corn and hay given to him, he ate without the slightest impediment.

'An ass being tied and thrown, the superior maxillary branch of the fifth nerve was exposed. Touching this nerve gave acute pain. It was divided, but no change took place in the motion of the nostril; the cartilages continued to expand regularly in time with the other parts which combine in the act of respiration; but the side of the lip was observed to hang low, and it was dragged to the other side. The same branch of the fifth was divided on the opposite side, and the animal let loose. He could no longer pick up his corn; the power of elevating and projecting the lip, as in gathering food, appeared lost. To open the lips the animal pressed the mouth against the ground, and at length licked the oats from the ground with his tongue. The loss of motion of the lips, in eating was so obvious, that it was thought a useless cruelty to cut the other branches of the fifth.

'The experiment of cutting the respiratory nerve of the face, or *portio dura*, gave so little pain, that it was several times repeated on the ass and dog, and uniformly with the same effect. The side of the face remained at rest and placid, during the highest excitement of the other parts of the respiratory organs.

'When the ass, on which the respiratory nerve of the face had been cut, was killed, which was done by bleeding, an unexpected opportunity was offered of ascertaining its influence, by the negation of its powers on the side of the face where it was cut across.

'When an animal becomes insensible from loss of blood, the impression at the heart extends its influence in violent convulsions over all the muscles of respiration; not only is the air drawn into the chest with sudden and powerful effort, but at the same instant the muscles of the mouth, nostrils, and eyelids, and all the side of the face, are in a violent state of spasm. In the ass, where the respiratory nerve of the face had been cut, the most remarkable contrast was exhibited in the two sides of its face; for whilst the one side was in universal and powerful contraction, the other, where the nerve was divided, remained quite placid.'

'The actions of sneezing and coughing are entirely confined to the influence of the respiratory nerves. When carbonate of ammo-

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nia was put to the nostrils of the ass whose respiratory nerve had been cut, that side of the nose and face where the nerves were entire, was curled up with the peculiar expression of sneezing; but on the other side, where the nerve was divided, the face remained quite relaxed, although the branches of the fifth pair and the sympathetic were entire. The respiratory nerve of one side of the face of a dog being cut, the same effect was produced; the action of sneezing was entirely confined to one side of the face.

'On cutting the respiratory nerve on one side of the face of a monkey, the very peculiar activity of his features on that side ceased altogether. The timid motions of his eyelids and eyebrows were lost, and he could not wink on that side; and his lips were drawn to the other side, like a paralytic drunkard, whenever he showed his teeth in rage.'

'All that excitement seen in a dog's head, his eyes, his ears, when fighting, disappears, if this nerve be cut. The respiratory nerve being cut across in a terrier, the side of the face was deprived of all expression, whether he was made to crouch, or to face an opponent and snarl. When another dog was brought near, and he began to snarl and expose his teeth, the face, which was balanced before, became twisted to one side, to that side where the nerve was entire; and the eyelids being, in this state of excitement, very differently affected, presented a sinister and ludicrous expression.'

About a year after the communication of these facts to the Royal Society, Mr. Bell read a second paper in continuation of the same subject, but relating particularly to the nerves which associate the muscles of the *chest* in the actions of breathing, speaking, and expression. The extensive combinations into which these muscles enter may be conceived, by reflecting on the actions and offices of this portion of the body, which supports and protects the heart and lungs, as well as the viscera seated in the upper part of the abdomen, and produces, by alternate opposition and yielding to the atmospheric pressure, the action of respiration. In order to explain these actions, Mr. Bell found it necessary to draw attention to the muscles of the chest; observing particularly upon those which come from the shoulder bones, and from the head, and descend to the upper part of the chest, and in explaining how these muscles expand the chest, as in drawing breath, he proves that at the same moment the head must be raised, and the shoulders drawn back. Having thus shown by the review of the muscles, which of those on the fore part and of those on the back part of the chest, are necessarily combined in the act of drawing breath, he has paved the way for removing the whole intricacy of this part of the Nervous system: for to reach these respiratory muscles, the raspiratory nerves must take a devious course, turning and twisting, and threading through the nerves of sensation and voluntary motion. Taking one of these nerves, the spinal accessory, and dividing it, he found that the muscles supplied by it

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were cut off from partaking in the act of breathing, whilst they retained their office under the other nerves; that is, could be used as voluntary muscles, when they no longer acted as respiratory muscles. To the spinal accessory nerve, therefore, Mr. Bell has given the name of Superior Respiratory; and he has ascertained that whilst the phrenic acts on the diaphragm in expanding the chest, the external muscles associated with the diaphragm are combined in such action by a similar provision of respiratory nerves; that what the phrenic, or internal respiratory, is to the diaphragm, the spinal accessory is to the muscles behind the neck and to the mastoidens, and the external thoracic to the muscles of the sides of the chest. The proofs of these opinions rest, like those of the office of the respiratory nerve of the face, on the origin and distribution of these nerves in the human subject, on the facts exhibited by comparative anatomy, or pathological phenomena, and on experiment. It has been seen that the spinal accessory arises, like the other respiratory nerves, from the lateral column of the spinal marrow. In fishes, which have no diaphragm, there are no phrenic nerves; nor are there any spinal accessory, or external thoracic, their muscular conformation not requiring any. The structure of the wing, and the absence of a mastoid muscle, render a spinal accessory nerve unnecessary to birds. Quadrupeds in general have all the three respiratory nerves of the trunk; but the camel, which is without a mastoid muscle, its neck and head being supported by a succession of muscles which are shorter and attached to the vertebræ, has no spinal accessory nerve.

By inquiring into the functions of the numerous distinct nerves which go into the parts surrounding the eye, Mr. Bell was led to observe the motions of the eyeball, with particular interest. The motions of the eye, consequently, became the subject of one of his papers, the third, read before the Royal Society, in which it was explained why no less than six nerves were sent to that organ, and crowded into a space so small as that of the orbit. The internal arrangements of this important organ of sense, have often furnished a pleasing subject of proper illustration, and are pretty generally understood; but what Mr. Bell terms 'the frame-work which suspends it, and by which it is covered and protected,' has been less attended to, though no less worthy of notice than the contrivances within the eye itself. Except when some part of this curious external apparatus is impaired, we seldom are aware of its great value. Paley was struck with the importance of the 'two little muscles that serve to lift up the eyelids,' by being acquainted with a gentleman who had lost the use of them, and was obliged 'to shove up his eyelids with his hands;' and there are other minute offices without the regular performance of which sight would be equally interfered with. Mr. Bell considers the motions of the eye in two points of view; with relation to mere vision, and with relation to the preservation of the organ. He has pointed out a peculiar revolving motion which had not previously attracted attention, and that the different conditions

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of the retina are accompanied by appropriate conditions of the surrounding muscles; he has divided these muscles into two classes, one presiding over the organ when we use it, the other taking charge of it when we sleep, or during faintness and insensibility; and he has shown the deductions which may be drawn from these circumstances, in connexion with the appearances of the eye in disease, and as an organ of expression.

The revolving movement of the eye is that by which, when the eyelids are closed, the cornea, or transparent part, is raised under the upper lid, a movement easily verified by closing one eye and placing the finger over the eye-lid, so as to feel the ball of that eye, and then shutting the other eye, in which case the globe of the eye over which the finger is placed is felt to move upwards, as it is also perceived to descend when the other eye is opened again. The intention of this motion is thus explained by Mr. Bell. The margin of the eyelids is flat, and when the lids are closed, they meet only by the outer edge of this flat margin, and a gutter is left between them and the cornea; this part of the cornea, therefore, in the space or gutter so left, would never be touched or swept over by the eyelids, unless the eyeball shifted its place in the act of shutting the eye; and it would consequently become dimmed by a continual collection and accumulation of moisture there, exactly in the axis of the eye. This motion of the eye also facilitates the flow of tears from the lachrymal duct, and is performed so rapidly, the globe of the eye moving upwards whilst the lid moves downwards, that protection is instantaneously given in all emergencies to which so delicate an organ is exposed, and which its outward guards are not of themselves calculated to meet. The best illustration of this motion of the eye, and one which Mr. Bell has often pointed out to his pupils in the Middlesex Hospital, is afforded in some cases of partial paralysis; cases in which there is no loss of sensation, but in which the motion of the eyelids of one eye is lost, and the eyelids remain open; in these instances, whenever the unaffected eye is closed, whenever the patient winks, the eyelid of the paralyzed side of the face is unmoved, but the globe of the eye is at that moment lifted upwards, as if to get under the raised lid; and this circumstance, it may be observed, not only shows the revolving motion of the eye, but the dependence of that motion on a nerve not involved in the paralytic affection which deforms the face. Mr. Bell further observes, that during this rapid motion, the lower eyelids move also, and in a direction towards the nose; so that if both lids are marked, it may be seen, that, when the eye is shut and opened, the spot on the upper lid descends, and ascends perpendicularly, while that on the lower moves horizontally towards the nose and from it, 'like a shuttle.' So that we see the whole effect of the act of winking, an operation so instantaneous as to have formed the basis of a proverb from time immemorial, is, that the secretion of the lachrymal gland is promoted, and directed towards the duct along which it is to flow from the eye after washing

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it, the upper eyelid descends and sweeps the eye; the globe of the eye is so moved, that the only part which could not be so swept is effectually cleared; and the under eyelid moves, so as to propel towards the outlet of the eye, at its inner angle, whatever has offended it, whatever would obscure or impair it, as well as the tears which have been used to wash these objects away. At the same time, the eye is relieved by the interchanges of muscular action which take place during this momentary action, and it is immediately protected when immediate protection is required.

These are but a small part of the proofs of design afforded by this single organ, contributing as it does so largely to the knowledge and the happiness of living creatures. In an examination of the works of Infinite power, we are always reminded of the benevolence with which it is combined, and of the limitation of our own conceptions. The larger works of the creation first attract our regard; we push our ambitious enquiries into the heavens, and are lost in ideas of space and magnitude, of rapidity and immensity of movement beyond the reach even of imagination. But if we look down into the smallest details of those works which are around us, or which are exhibited in the 'express and admirable' structure of our own frame, we are no less delighted by exquisite contrivance and delicacy of execution. The more we increase our means of acquiring knowledge of the larger features of the universe, the more we are impressed with the greatness of the power which sustains and directs so stupendous a work; and the more minutely we pursue researches which our unassisted senses could not institute, the more delicate, the more immeasurably superior to any performance of human hands, do all the divisions and parts of the vast work appear.

Nothing, we think, can be more fortunate than the induction by which Mr. Bell has thus unfolded the marvellous contrivances that are combined in the arrangement of the eye—having demonstrated with admirable patience and precision, that there are five different objects to be provided for by appropriate nerves:—1. vision; 2. common sensibility; 3. the voluntary direction of the eye-ball; 4. the condition of the eye in sleep, or at perfect rest; 5. the instinctive and rapid motions in winking, to protect the eye whilst it is exercised and watchful; and lastly, it has been shown, by some curious observations, in a manner quite unexpected, that there is a necessity for a connexion between the muscles of the eye, and the muscles of respiration generally, without which this delicate object would suffer derangement. It was only by such minute attention to the functions of this part that he could arrive at the rationale of the number of nerves (no less than six) going into the orbit.

Our author has certainly grappled here with the most difficult part of the whole system: And yet the advantage of his method might perhaps have been better illustrated by attending to the different operations of the tongue, which is the instrument of deglutition—the principal instrument of articulate language—the seat of an ex-

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quisite sense of touch—and the organ of taste. This explains why there are three nerves distributed to it, each of which forms different connexions with other nerves; that nerve which is the organ of taste being connected with the salivary glands and muscles of mastication; that which connects the muscles of the tongue with those of the fauces in swallowing, passes down to the muscles of the pharynx; whilst that which is the organ of volition is connected with the nerves of the larynx, and the nerves of respiration generally,—to combine the actions of the tongue in articulate language with the act of breathing.

It has too commonly happened that those who have been ambitious to improve medical science have neglected this instructive study, for the sake of experimenting. The example of reserved and judicious appeal to experiment, in support of views derived from attention to structure, presented in these labours of Mr. Bell, is, in this point of view, particularly instructive. Whilst he never seems to have performed an experiment which could have been avoided, and has decidedly escaped all reasonable censure on the score of cruelty, not one of his experiments appears to have been idle or fruitless. The rash and unadvised destruction of animal life, in quest of whatever may chance to turn up, or of whatever is new and rare, can by no pretext be justified. The subject which now occupies us has been followed with every variety of investigation, and attempts have been made to snatch, as it were, a knowledge of the most hidden things of the Nervous System, by experiments without number; yet the results of injuries, most heedlessly inflicted on various portions of the cerebral mass cannot be said to have led to conclusions that we can at all rely upon, even respecting the parts actually involved in such injuries. In many instances the only effect has been the loss of power to direct the movements of the body, and a general diminution of sensorial power—from which no precise conclusion can be drawn. All that has been got at in this way, with all the diligence and all the disregard of life, by which the attempts have been characterised, is not to be compared with the valuable results obtained by those physiologists who, labouring more patiently, and having caught a steady view of some important fact, have first mutually considered which, of many paths, would most surely lead them to the point; and who have then, by careful reasoning, aided by knowledge industriously gathered from various sources, proceeded, by the light of a few decisive experiments, step by step, to what has been hailed, by all competent judges, as equally valuable and indisputable. Such physiologists proceed like the skilful miner, who, having first ascertained, from indications that cannot err, that there is a precious vein beneath the surface, commences his labour when it can be commenced with the most advantage.—Those of another description are like wild speculators, the Dousterswivels of science, who either proclaim a treasure when none exists, or lose their time in indiscriminate search; and, in their eagerness

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for gold, assert what is not true, or waste their illdirected industry on hopeless and ungrateful soils. We are told by Celsus that, even before his time, and in the age of Alexander, Erasistratus indulged himself very freely in the examination of the bodies of criminals whilst they were yet alive, 'etiamnum spiritu remanente,' and saw the contractions of the heart, and beheld the lacteal vessels of the mesentery filled with chyle; but it was many hundred years later before the use of the lacteals, or of the action of the heart, were comprehended; and the knowledge of their uses was gained in a very different manner. The immortal Harvey, in relating his own progress, says, '*I began to think whether there could be* any motion of the blood, as in a circle; *which I afterwards found to be true.*'— And thus it has probably always been, and must always be, with great discoveries. In the midst of patient research, accident presents a single fact unthought of before, and the fact kindles a train of conjecture; a possibility is imagined; the faculties employed in the investigation and comparison of facts, are called into exercise; reasoning suggests experiment, and directs pursuit; careful observation governs and regulates the whole process, and a great truth is evolved.

It would be to forget half the value of the enlightened views of the structure and functions of the Nervous System which have occupied our attention, if we were not to allude to the great improvement that may be expected to arise from them to medical science. From understanding the anatomy and office of any part of the system, to clear ideas of the diseases of such structures of functions, the step is easy and direct; and when both are understood, it is not difficult to apply principles of treatment with increased effect. To the Surgeon there are many very obvious applications of the information given by Mr. Bell, concerning the properties of two great nerves of the face. Here the division of different nervous branches has been frequently performed for the relief of that distressing disorder, the Tic Doloureux; sometimes with complete success, but sometimes not only without benefit, but with consequences highly inconvenient; events which can now be explained. Whether the branches of the portio dura, or respiratory nerve of the face, may not in certain states of disease be affected with pain, is perhaps a question not quite decided; but it is easily understood, from the uses of this nerve, that if any attempt is made to relieve pain by dividing any part of it, there will be a loss of motion in some part of the muscles of the face, and consequent deformity; and if in this, or any other operation about the eye-lids, this nerve should be divided in that situation, consequences still more unfortunate would ensue; for it is the nerve on which the motions of the eyelids depend, and as they could not then be closed, the cornea of the undefended eye would become opaque, and the sight of the eye would be lost.

When a man has been deprived of all sensation and power of voluntary motion below the lower part of the neck, by an injury of the spine in that part, but continues to inspire and expire naturally,

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can cough, blow his nose, &c., we learn from Mr. Bell's observations, that the continuance of his respiration does not depend on the continued power of the phrenic nerve alone, of which the origins are higher than the seat of the injury; and we comprehend, that if the motions of the thorax and abdomen depended wholly on the regular nerves, we should see *them* also suspended. But the phenomenon is sufficiently explained, when we remember that these alternate respiratory motions are a consequence of the unimpaired state of the respiratory nerves in a wider sense, of the phrenic for one certainly, but also of the superior and external respiratory nerves, of which the origins are as high as those of the phrenic. If the injury happens above the origin of the phrenic nerve, but not so high as that of the spinal accessory, breathing will still be carried on, though for a short time only; the action of the diaphragm is lost, and the patient breathes with much effort of the shoulders, between which the head is almost drawn at every inspiration; those muscles being now principally called into action which are supplied by the spinal accessory. In these, and other accidents affecting the spinal column, the surgeon is therefore now enabled to judge more correctly of the seat of the injury, often inaccurately referred to by the patients themselves; and he is enabled better to assign a reason for the continuance of life in deep and serious wounds of so important an organ as the brain; as well as to account for the strange circumstance which is witnessed in some monstrous births, in which respiration is performed, although there is no brain at all.

To the physician, the advantages of an exact acquaintance with the Nervous System are even greater. Instead of rejecting nervous theories, as some eminent practitioners have done, in the most unqualified terms, the physician may now find in this delicate system secure foundations for valuable practical improvements; may explain much that was before obscure, and much, that, though successful, was but empirical; may distinguish partial from general affections of the nerves with more certainty, and enlarge the powers and applications of medicine. Diseases, of which the phenomena were apparently most arbitrary and intractable, must now become more clearly understood and more easily managed. Distinctions also may be more readily made between external phenomena depending on slight and temporary paralysis, occasioned by partial affections of the muscles of the face, and those more serious cases originating in the brain: and, of course, between affections of the symmetrical and the superadded nerves. The symptoms of what are really nervous disorders, affecting different systems, may be more confidently referred to the causes affecting what may be called their anatomical origins, and better arranged; and in very many forms of disorder, the signs which indicate danger, or afford reasonable ground of hope, signs connected with the respiratory system, will be more justly appreciated. Even those sudden and alarming occurrences will be less mysterious, in which instantaneous injury, or overwhelming

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pressure of the medulla oblongata, extinguishing the function of respiration at once, produces immediate death, those cases in which, as Dr. Bell observes, 'the change takes place with appalling suddenness; not a breath is drawn, nor a word uttered, nor a struggle to indicate pain, nor a feature discomposed.' And although this exact knowledge does not always confer immediate practical advantage, it seldom fails to lead to some ultimate benefit, and to the acquisition of some unforeseen resources against disease. Those who are engaged in the investigation of any science, can never see the full extent of the advantages which will reward their diligence, according to the sevenfold liberality with which intelligent industry is always repaid, that no inducement may be wanting to engage in it. The daily instances of respiration being affected in consequence of the presence of some offending matter in the stomach, so often, for instance, exemplified in asthma, are at once explained, when the close alliance between the stomach and respiratory nerves is clearly known; and the less distressing, but inconvenient affections of the same system, producing odd twitchings and catchings of the eyelids, or face, or shoulders, are no longer incomprehensible; and a nearer approach may be made towards understanding that singular disorder, called Angina Pectoris, which certainly does not always depend on a diseased state of the heart. Abundant pathological evidence is scattered through the pages of Mr. Bell's works, and bearing on all parts of the inquiry.

In one instance, the inconvenience of cutting a branch of the portio dura, going to the angle of the mouth, though not very great, was yet very marked; it was done by Mr. Bell himself, in taking out a tumour from before the ear of a coachman, and the man complained that he could no longer whistle to his horses. Numerous cases, indeed, of a similar kind, have now been amassed, and the Appendix to the Papers on the Nerves, consists entirely of such, chiefly communicated to him by other practitioners, and completely proving all that is required.

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TO SUBSCRIBERS.

The great delay in the publication of this number requires an explanation. On the 18th of September, the day on which the printing of the number was commenced, the Editor, in rescuing one of his friends from the flames, suffered extensive burns on both his hands. The accident was followed by various afflicting constitutional disorders, from which at this time, October 24, he is but beginning to recover. He was thus prevented from finishing several original articles for the number, and has been compelled to substitute selected matter; which he hopes, however, from its intrinsic excellence, will not be unacceptable to his readers.

The October number will positively be committed to the press in a few days, and issued with all possible expedition.

MEDICAL SOCIETY.

The semi-annual meeting of the *First District Medical Society of Ohio*, will be held in Cincinnati at the Medical College Edifice, *on the last Tuesday of November*, 1828, commencing at 10 o'clock in the morning.

JAMES M. MASON, M. D.
Recording Secretary.

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THE

WESTERN JOURNAL

OF THE

MEDICAL & PHYSICAL SCIENCES.

OCTOBER, 1828.

ESSAYS AND CASES.

ART. I.—*Report of a case of Gunshot Wound of the Lungs and Heart, with the appearances after death. By* LEONARD RANDAL, M. D. *of Tennessee.*

On the 5th of April 1828, a negro boy aged 15 years, was by accident, shot in the breast, with a common fowling piece loaded with shot. He stood six feet from the muzzle of the gun, and received the whole charge. All the shot, with the exception of two or three, entered near each other, within the area of a dollar, on the left side of the sternum, beginning about an inch and a half below its lower extremity. He fell to the ground immediately, on receiving the wound.

The accident happened at one o'clock. Dr. Hudspeth and myself were immediately sent for. I was gone to the country, but the Doctor repaired to the house without delay. His pulse was scarcely perceptible, and he breathed with great difficulty. The Doctor opened a vein, and took three or four ounces of blood, and gave him thirty-five drops of laudanum upon which his pulse rose a little; he also applied a poultice of bread and milk to the wound, to encourage the hæmorrhage which was not profuse. When I arrived two hours after the accident, I found his pulse very weak and irregular. We gave him stimulants, occasionally, which rendered it stronger and more steady; he expectorated blood freely. We gave

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him a dose of ol. ricini which his stomach rejected immediately; and while vomiting he discharged a large quantity of wind, suggesting to us that the external air found its way into the œsophagus, from that tube having been wounded; a suppostion that was strengthened by his frequent subsequent eructations. We also gave him a dose of sulphate of magnesia, which like the oil was thrown up.

April 6. In the morning administered an opiate, and half an hour afterwards, ten grains of calomel with ten of rhubarb. In the evening we gave him half an ounce of oleum ricini, and about midnight an enema.

On the morning of the 7th, we administered an infusion of senna, about twelve another enema, and at three repeated the infusion. He had now become extremely restless, his pulse was very weak and intermittent, syncope came on, and he had the appearance of being in the jaws of death. We gave him camphorated spirit, he recovered, and his pulse became fuller, a degree of fever supervened, for which he took the sp. nitr. dulc. and it soon abated. About six he had an alvine discharge, the first he had experienced except what was brought away by the enemata. He immediately got much better, felt an inclination to eat, and took a cup of soup. In the course of the night he had two or three discharges more, and rested better than he had previously done, though he generally had a great disposition to sleep.

Morning of the 8th. Said he felt much better. About two o'clock in the afternoon, a fever rose and he became restless, complaining of great pain in the breast, and about the heart. There was some tension and swelling of the right hypochondrium and his feet and legs also swelled; he had two or three bloody alvine discharges, and was very restless through the night, although we kept him on a strict antiphlogistic regimen, and gave him an anodyne.

Next morning (9th) the wound began to slough, he was restless, pulse very weak, frequent and intermitting, extremities cold, he spit blood, and his respiration was difficult. We bathed him in warm water, and gave him wine; his pulse rose and his circulation became full and regular. The ab-

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dominal swelling abated, he felt much better, and took nourishment. At three o'clock in the afternoon fever rose, he became very restless, and complained of pain and heat about the heart. His pulse at the same time was weak and frequent, and his extremities cold; we bathed them in warm water, and gave him an anodyne, after which he became easy, and rested well all night.

The 10th. The wound continued sloughing. Towards evening his fever rose higher than usual, his skin became hot and dry, he was taken with a violent cough, which gave him great pain, we administered an expectorant mixture, and he rested well through the night.

On the 11th the wound had sloughed so considerably as to form a hole into the cavity of the thorax, two thirds of an inch in diameter. The greatest part of the bruised flesh, seemed indeed to have sloughed off, down to the cartilages of the ribs, one of which had been perforated by the shot. He felt some anxiety in the breast, especially about the heart, and made an effort to puke, when a considerable quantity of thin pus flowed from the wound, and afforded him relief; he took an anodyne and rested well that night.

On the 12th the discharge continued, the wound put on a healthy appearance, and began to granulate.

It continued gradually to heal, and in three or four weeks was completely cicatrized; the œdematous swelling of the lower extremities disappeared in a week or two after the last date, and although extremely emaciated, he was able to walk about and had many appearances of getting well. When in this promising condition, he relapsed, apparently from indulging himself too freely in a meal of strong diet. From this relapse he did not recover, a hectic fever supervened, and he died on the night of the 11th of June, sixty-seven days after the accident.

Appearances after death.

Leave was obtained to open the body, to which I proceeded next morning, assisted by Dr. Hudspeth. In dissecting up the integuments, we found several shot lodged against the

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ribs. The membraneous covering of the ribs and cartilages, was in a state of inflammation, and bore slight marks of gangrene. On raising the sternum, I found part of the pericardium absorbed, and a part of it adhering to the surface of the heart, while near its base, it was morbidly attached to the pleura (mediastinum.) An adhesion of the left lobe of the lungs, to the pleura had also taken place; there was lodged in its cellular substance, at various depths, a number of shot, and the lung was considerably inflamed. The *right* lobe was nearly obliterated, it had entirely lost its cellular appearance, and become dense, hard, and tenacious, and its size was not more than one eighth of that of the inflated lung. It appeared to us, that respiration had never been performed in that lobe from the time it received the wound. A small portion of serum was found in the pleura. The heart appeared to be considerably enlarged, and was irregular on its surface, at the places where it adhered to the pericardium. In cutting through its parietes, we found some parts of them nearly cartilaginous, and on opening the right ventricle, we were astonished to find three shot lying loose in its cavity. This ventricle was greatly enlarged, and lined with a thick coat, from which there projected numerous papillæ of a dun colour, giving it the appearance of the upper surface of the tongue of an ox. On opening the right auricle, we found two shot in its cavity, also lying detached. The internal surface of the auricle did not appear to have sustained much injury from their presence. The shot had entered the heart about one third of the way from its base to its apex, the wounds made by them were at a little distance from each other; they had all cicatrized, but the spots were plainly to be seen. In the cavity of the peritoneum, as in that of the pleura, there was a small quantity of effused serum. The liver appeared to be somewhat enlarged, but not otherwise much diseased, except about the gall bladder and its duct, where there were some grangrenous appearances, and part of the colon was also gangrenous.

In conclusion I may remark, that notwithstanding the entire loss of one half of the organ of respiration, and the pres-

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ence in the other of a number of shot, the absorption of a part of the pericardium, the adhesion of another part to the mediastinum, and the presence of five shot in the cavities of the heart, this boy lived two months and six days.

The dissection was performed in the presence of a number of spectators of respectability, who were all eye-witnesses to the facts above stated.

LEONARD RANDAL, M. D.

Purdy, Mc'Nary County, Ten. Sept. 15th, 1828.

ART. II.—*Wounds of the Heart.* Translated from the DICTIONAIRE DE SCIENCES MEDICALES, vol. 43.

The foregoing case, so far as it relates to the wound of the heart at least, is not without interest. Supposing that some of our readers might be disposed to inquire, whether wounds of that organ have generally proved fatal, and whether the records of surgery furnish a parallel case to that reported by Dr. Randal, we have been induced to refer to that learned, circumstantial, and comprehensive work, the great French Dictionary of the Medical Sciences, and translate for this Journal, the article, *Wounds of the Heart.* It will be seen that it mentions no case similar to the above; nor do we recollect to have met with the report of any case in which an *extraneous* body resided, even for a short time, in the cavities of the heart. Dr. Randal's patient seems to have died from the wound of the lungs rather than that of the heart; though had the former been uninjured, he doubtless would have died, but at a more distant time, from disease of the latter. His death, however, would have been the immediate consequence, not of the wounds of the ventricle, but of the inflammation of its internal surface, occasioned by the mechanical action of the shot lodged within it. Had they passed out, and the lungs remained unhurt, the patient would probably have survived

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the accident. The size of the shot is not mentioned, but it may be presumed that they were small.—Ed.

Translation.

Wounds of the Heart. In wounds penetrating the cavity of the chest, the heart may be injured, and its læsion is generally mortal; it is not, however, necessarily fatal if the foreign body has not penetrated into its cavities, as we may be convinced by reading the Treatise of Senac upon the structure and diseases of the heart, 2 volumes in 4to. A posthumous case of Wolff seems to prove, that there had been a cure in a man who had formerly received a wound in the heart. If we may credit the reports contained in the *Melanges des curieux de la nature*, cicatrices have been seen upon the hearts of domestic animals; and some observers declare that they have even met with them in man. M. Richerand, *Nosogr. chirurg. tom. iv*, relates that in dissecting the body of an individual who had once received the thrust of a sword above the left hypochondrium, he found the pericardium adhering to the heart by a cicatrix, which was itself attached to the parieties of the left ventricle.

Whenever an instrument wounds the base of the heart, death inevitably follows; for it is from this part that the great bloodvessels issue. In every case of this kind, some one of them must be injured, and with the blood that issues, life itself escapes: we may add that it is at the base of this organ, that the great cardiac plexus of nerves is spread out.

Numerous observations prove that men have lived for many days after receiving very deep wounds of the heart; some penetrating into one of the ventricles, others piercing both ventricles, and traversing the whole organ. Saviard cites the case of a man who had his heart pierced through and through, and who still lived from four to five days. On opening the body after death, Saviard found, that both the left ventricle and the *septum* which separates it from the right, had been perforated; and that some *coagula* of blood had stopped up the wound. A young man, according to Thomas Bartholin, was wounded between the third and fourth ribs of the

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left side; he was able to return to his house, at a considerable distance from the place where he was stabbed, and survived, for five days, a narrow wound of the right ventricle.

In 1735, Morand exhibited to the Academy of Sciences, the heart of a soldier, who died at the Hospital of Charity, of a sword wound in the anterior and lateral part of the left side of the chest. For three days he did not experience any violent symptoms: a fever supervened on the fourth, with difficulty of respiration, and he died on the ninth. The sword had passed through the pericardium, the inferior part of the right ventricle, the diaphragm, and the liver. We read in the *Nouvelle Doctrine Chirurgicale*, of M. Leveille, the history of a young man, the left ventricle of whose heart, pierced vertically, received a wound three or four lines in length: he expired the seventh day. Dehors, Rhodius, and Fantoni, have seen individuals, wounded in the heart, survive fourteen, sixteen, seventeen, and even twenty days. To explain this phenomenon, some have conjectured that in the cases just cited, the wounds were so small that the blood only escaped *guttatim*, and that there formed in them a clot, the detachment of which at the end of one or many days, was followed by death. Others have supposed that the wounds were superficial, and that there remained a layer of fibres sufficiently strong to resist for a time, the escape of the blood; but that they were at length ruptured by the contraction of the heart, and the hæmorrhage which ensued, occasioned immediate death. Saucarette relates, in the *Melanges de Chirurgie*, a case reported by Levoyer, in which it was established, that the tricuspid valves, had given birth to a fatty body, which, by its interposition between the lips of a wound of the right ventricle, prevented the hæmorrhage, in a soldier, who lived for two days after the accident.

Ambrose Pare has recorded, that a gentleman, at Turin, when engaged in single combat, received a thrust of a sword under the left breast, upon which he discontinued the contest, but walked two hundred steps and then expired. The heart presented a wound, which would receive the end of the finger, and a great deal of blood was extravasated upon the

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diaphragm. The two ventricles were found pierced through and through in a student of Ingolstadt, who, says Schenk, having received the puncture of a stylet, in the left side of the chest, walked a considerable distance, preserved his presence of mind during an hour, recommended himself to God, conversed and then died. Is it not probable in this case, that the instant the wound was inflicted, the heart contracted spasmodically, and thus closed the wound, and prevented the immediate escape of the blood? The hæmorrhage would take place, when the spasm having ceased, the wound would become extended to its proper dimensions.

M. Sue (*Recueil periodique de la Societe de Medicine de Paris*, viij p. 31) reports the history of a woman, who pierced the heart of her husband, when asleep, with a very long and sharp golden pin, which she had made expressly for the purpose. The right ventricle was penetrated completely through. She acknowledged her attrocious crime and was condemned to death.

The diagnostic of wounds of the heart is very difficult. In fact, their situations, a knowledge of the depth to which the instrument penetrated the chest, the abundant flow of blood, the trembling of the whole body, the faintness, the smallness and inequality of the pulse, the cold sweats, the anxiety, the coldness of the limbs, the difficulty of respiration, sometimes palpitations, and fever if life be prolonged, are symptoms common to wounds of the great vessels, of the pericardium, and of the diaphragm. When *many* days elapse between the infliction of the wound and the death of the patient, it is difficult to predict the state in which the heart will be found.

A wound of one of the coronary arteries may be mistaken for a wound of the heart. In the month of August 1697, Lamotte saw the captain of a regiment, Lamar, who received, behind, a thrust of a sword, between the fifth and sixth left ribs, the point of the instrument made its exit, a little above the nipple of the same side. The captain, cold and without pulse, expired two hours afterwards. They found the pericardium opened in two places; and an oblique wound,

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not penetrating the heart, extended through the coronary artery: The cavity of the thorax was full of blood.

When wounds of the heart have a certain extent, they produce immediate death; if they are narrow, the life of the patient may be prolonged for some days.

What treatment can be opposed to such a wound? If it should not be speedily mortal, we ought to diminish the quantity of blood by copious venesection, administer antispasmodics, and keep the patient in the most perfect repose. We should be careful, not to probe or sound the wound, for fear of detaching the clot, and thus removing the only obstacle which opposes some resistance to the flow of the blood.

ART. III.—*Some account of a fatal case of Softening of the Heart with apparent Emphysema of the Lungs. By the* EDITOR.

On the 30th of July, 1828, I was requested to visit Mr. R. B. and continued my attendance upon him till the 1st of September, when he died.

The patient was 67 years of age, a native of England, by occupation a cordwainer, of sober and industrious habits, in size above the ordinary standard, rather corpulent, but of an athletic temperament.

For more than half his life he had been afflicted, on both arms, with an eruptive disease, which seems to have been a variety of dry psoriasis. About 18 months before his death, it left those parts, and attacked his head and face. The itching in both cases was, occasionally, intolerable; and between the disease and the rubbing of the parts, which it occasioned, he lost all the hair of both his eyebrows; and the affected skin assumed a sooty complexion. Six or eight weeks before I saw him, it abated on the face, and fell down to his chest, from which it disappeared before his death. Soon after attacking this part, he experienced occasional paroxysms of pain in the region of the heart. When I was called in, at the time above mentioned, he was confined to his bed.

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His respiration was somewhat embarrassed, but he had little or no cough; his pulse was intermitting, rather increased in frequency—but not very strong; he had a slight swelling of the abdomen, and considerable œdema of the feet and legs, which were habitually cold. His tongue was clean, and his bowels easily moved; but his appetite was gone, and he frequently vomited. His spirits were habitually depressed, and he often shed tears. In the day he slept a little; but his morbid vigilance and restlessness at night were distressing in the highest degree, and accompanied by a kind of delirium. His chest, under percussion, sounded well; and, through the stethoscope, a *feeble* respiratory murmur could be heard over every part. On resorting to the instrument with a view to the movements of the heart, I could distinctly perceive its intermissions, but neither its sound, impulse, nor volume seemed to be remarkable—they were indeed rather weak. He could lie on either side, and on his back, in a horizontal posture, without difficulty.

I was undecided as to the diagnosis of his malady; but on the whole, presumed it to be an original hepatic disorder occasioning the eruption, sooty complexion, nausea, and dropsical effusions. The irregular pulse I supposed to be caused by a hydro-pericardium.

He had been treated by his physician with stimulants and narcotics of all kinds, without the least benefit. Admonished by this, and guided by the existing symptoms, I put him on the use of the blue pill, a compound infusion of digitalis, and a hot salt bath, with frictions to his feet and legs. Under this treatment his bowels were kept regular, the temperature of his lower extremities was nearly restored, and a diuresis occurred, which was attended with the disappearance of all tumefaction from the abdomen and lower extremities. Such effects inspired a transient hope, that he might be cured; but I soon discovered that no further amendment was taking place; that his paroxysms of vomiting occurred oftener; that he was undergoing a rapid emaciation; that his pulse became daily more irregular; that his hypochondraism was transformed into a kind of melancholic delirium; under which he would rise

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from his bed, and, fancying himself from home, endeavour to escape from his room; finally, that his morbid watchfulness, gave place to the opposite condition of taciturnity and stupor. It was now sufficiently obvious, that he laboured under a malady of the heart; but of what kind I was unable to decide. I bled him once. His blood was sizy, but no mitigation of the symptoms followed. A blister to the epigastrium did no good, either to the heart or stomach; cupping over the former organ was attempted; but by this time he had lost fat, till the integuments were so loose, as to fill the vacuum in the cups, and prevent the escape of blood. Finally, recourse was had to the sulphate of morphia, the bark and other tonics and stimulants, but they produced no sensible effects. In the closing stage of the malady, his mental faculties suffered still greater impairment, and his dyspnœa became much more distressing. He was long *in articulo mortis*, and exhibited an agitation of the heart, lungs, and muscles of respiration, which it was distressing to witness. The diaphragm especially, seemed to be strongly convulsed.

To abridge this narrative of symptoms, I would select the following as characteristic and constant:—Habitually intermitting pulse—occasional vomiting—epigastric anxiety—low spirits—debility and confusion of mind, and morbid vigilance succeeded by coma. Not long before his death he was taken out in a carriage, but was comatose on the jaunt.

Dissection.

Permission was granted to examine the contents of the chest and abdomen; but circumstances limited us to a period of time, too short, for a perfect search into their condition.

On proceeding to open the thorax, the cartilages of several ribs, on each side, were found in a state of ossification, and required the use of the saw.

The lungs did not collapse, and *seemed* to be universally emphysematous. As far as examined, they were neither tuberculous nor hepatized. No pleuretic adhesions existed; but in examining for them, I was surprised to find a quantity of dark-

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fluid blood, in each side of the chest. In the right, it scarcely amounted to an ounce, but in the left there was, by estimate, more than two ounces.

The heart was enveloped in an extraordinary quantity of fat. It was of the common size; but far from the ordinary shape, its apex being enlarged and tuberous. It was evident from external inspection, that the pericardium contained no water; and on cutting through that membrane, with a view to turn out the heart, it was found adhering to that organ throughout its whole extent; indicating a universal pericarditis. At its junction with the pleura of the diaphragm, the effects of inflammation were equally obvious, and extended to some distance on the surrounding parts of that organ. At the point of union between the two, the pericardium had given way, and about the aperture there was a quantity of red, pulverulent, pulpy matter, which was the muscular substance of the heart, transformed by disease. In cutting upwards from this place at right angles to the septum, so as to divide the organ into halves, the whole extent of the diseased structure was exposed to view. For more than an inch, the parieties of each ventricle, together with the partition, had lost its fibrous texture, was softened, and flaky or laminated, so that the finger passed readily through it, in all directions. The transformation was greatest at the apex, indicating that it had commenced in that part. Its termination above was not pointed out by any line of demarkation, and the morbid action which occasioned it had continued to advance upwards to the time of death. The columnæ carneæ had experienced the fate of the parieties, but beyond the limits of the disorganized part, they were entire. Both they and the parieties, however, were paler, and more relaxed than in the healthy heart. The valves were free from degeneracy.

The immediate cause of the death of the patient was now made obvious. As long as the disorganization had not yet extended through the parieties, or the pericardium remained entire, the circulation could be maintained, but when the læsion became so great as to suffer blood to escape into the cavities of the pleura, the dyspnœa would of course increase;

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at the same time the debility of the organ would prevent it from injecting itself, the lungs, brain, and spinal marrow, with the blood necessary to their support; while that which they received was undoubtedly, from the emphysema of the lungs, by no means sufficiently æreated, to enable it to sustain the energies of the system.

In the partial examination which was permitted, of the abdominal viscera, they were found to be healthy. Of the whole, the liver was examined with the greatest care, and contrary to my expectation, was unaltered in size, colour, and texture.

Cincinnati, October 1st, 1828.

ART. IV.—*Extracts from Laennec on Diseases of the Chest, supplementary to the preceding case.*

As the *unique* and valuable Treatise of M. Laennec, is by no means so extensively disseminated and profoundly studied by the physicians of the Western States, as it deserves to be; we shall collect from it, and reprint under distinct heads, his principal observations on the different lesions, which existed in the foregoing case.—ED.

1.—EMPHYSEMA OF THE LUNGS.

The disease which I designate by this title is very little known, and has not hitherto been correctly described by any author. I for a long time thought it very uncommon, because I had observed only a few cases of it; but since I have made use of the stethoscope, I have verified its existence as well on the living as the dead subject, and am led to consider it as by no means unfrequent. I consider many cases of asthma, usually deemed nervous, as depending on this cause. The chief reason of this affection having been so completely overlooked is, that it is in some sort merely the *exageration* of the natural condition of the viscus.

In order that we may have a clear idea of the disease in question, it may be useful to advert to the natural organization of the pulmonary tissue. In examining, in a good light, the surface of the healthy lung, we can perceive, even with the naked eye, through the transparent pleura, which forms its covering, that the parenchyma of

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the viscus consists of an aggregate of small vesicles, irregularly spheriod or ovoid, filled with air, and separated from each other by opaque white partitions. These vesicles,—which, as seen on the surface of the lung, have the appearance of small transparent points,—are not all of one size. The largest are one third or one fourth part the size of a millet-seed. These are grouped in masses or lobules, which are circumscribed by partitions of condensed cellular substance, very thin, but yet thicker and more opaque than the partitions which separate the individual air-cells. These larger partitions traverse the lungs in all directions, and, consequently, in cutting each other at every possible angle, form, on the surface, figures of very various shapes—lozenges, squares, triangles, &c. It is along these partitions that the black pulmonary matter of which we have already spoken, is most plentifully deposited.

In emphysema of the lungs, the size of the vesicles is much increased, and is less uniform. The greater number equal, or exceed the size of millet-seed, while some attain the magnitude of hemp-seed, cherry-stones, or even French beans (haricot). These latter are probably produced by the reunion of several of the air-cells through rupture of the intermediate partitions; sometimes, however, they appear to arise from the simple enlargement of a single vesicle. The largest of these dilated cells are often in no respect prominent on the surface of the lung; sometimes they form a slight projection. In the latter case the structure of the lung acquires a striking resemblance to the vesicular lungs of the Linnæan Reptilia. Sometimes, though more rarely, we observe on the surface of the lung single vesicles, distended to the size of a cherry-stone or larger, quite prominent, exactly globular, and apparently pediculated. I say *apparently* pediculated, because on cutting into them we find that there is no pedicle, but merely a constriction at the point where the cell begins to rise beyond the surface of the lung. The cavity of these dilated cells descends some little way into the substance of the viscus, and there its walls do not collapse, when cut, as in the projecting portion. At the bottom of this inferior portion of the cavity, we find small openings by which the dilated cell communicates with the adjoining ones, and with the bronchia. That these projecting vesicles are produced by the dilatation of an air-cell, and are not owing to the extravasation of air under the pleura, is proved, as well by the prolongation, just mentioned, of their cavity into the pulmonary substance, as by the circumstance that we cannot force the contained air, by pressure with the finger, to leave its place and to pass under the contiguous pleura,—as would be the case if it were extravasated.

As long as the parts continue in the state above described, the disease consists merely in an excessive, permanent, and unnatural distention of the air-cells, the air being still contained in its proper cavities; but when the distention becomes still more considerable, or takes place with greater rapidity, the air-cells are ruptured in certain

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points, and the surrounding cellular substance of the lung becomes distended by extravasated air, exactly in the same manner as in emphysema of the subcutaneous adipose membrane. In this case we find on the surface of the lung vesicles of an irregular form, which can be made to change their place by pressure with the finger. They vary in size from that of a hemp-seed to that of a walnut, or even an egg. Like the simply dilated cells, these vesicles contain nothing but air, which makes its escape on their being punctured with a pin. Sometimes the air, though truly *extravasated* under the pleura, cannot be displaced by pressure in the manner just mentioned. This happens when the extravasation is situated at the point of reunion of the partitions which divide the different groups of air-cells, as above mentioned. In this case the projection has usually a triangular shape, and is not very considerable.

I have never found this extravasated air penetrate, to any considerable extent, into the substance of these interlobular partitions, nor into the cellular substance which surrounds the larger blood-vessels and bronchial trunks; but I have seen the pulmonary substance in the interior of the lung lacerated by over-distention of the air-cells. These lacerated portions contain air, and sometimes also a small quantity of blood, either coagulated or loose; and the surrounding air-cells, which form the immediate walls of the excavation produced by the rupture, are observed to be loose, flabby, and without their natural globular figure.

The bronchial tubes, especially those of a small calibre, are sometimes very evidently dilated in those portions of the lung where the emphysema exists. This is easily proved by comparing the diseased and sound portions of the lungs. It is a thing to be expected; and it is, indeed, singular that it is not more common, since the cause which dilates the air-cells must act equally on the bronchia: it is, notwithstanding, very rare.

Emphysema may affect both lungs at the same time, one only, or a part of one or of both. In the latter case,—and indeed in any case, as long as there do not exist vesicles of considerable size on the superficies of the lungs,—it is easy to overlook the disease in the dead subject, and, as I have already said, I am convinced that this has often been done, not only by myself but by the best practical anatomists. For my own part I am convinced, that if we carefully examine the lungs of subjects who have long suffered from dyspnœa, from whatever cause, we shall almost always find more or fewer of the air-cells dilated. In lungs studded with tubercles, which presented no other symptom of emphysema, I have sometimes found two or three of the cells dilated to the size of a hemp-seed.

When the disease exists in a high degree, and occupies the whole of one or both lungs, one cannot help being struck with the appearance of the parts. The lungs seem as if confined in their natural cavity, and, when exposed, instead of collapsing as usual, they rise in some degree and project beyond the borders of the thorax. If

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we examine them in this state they feel firmer than natural, and it is more than usually difficult to flatter them. The crepitation they afford on pressure, or on being cut into, is less, and of a kind somewhat different; it is more like the sound produced by the slow escape of air from a pair of bellows; and the air makes its escape from the cells much quicker than in a healthy state of the organ. When we detach the lung, the crepitation is found to be still less perceptible, and the sensation conveyed by pressing the parts is very like that produced by handling a pillow of down. On placing an emphysematous lung in a vessel of water it sinks much less than a healthy lung; sometimes it floats on the surface with scarcely any obvious immersion. The pulmonary tissue is drier in a lung affected with emphysema, than in a healthy one; and it is unusual to find, even towards the root of the lungs, any trace of the common serous or sanguinous engorgements usually found after death. The contrary, however, is sometimes the case. When a single lung is affected, it becomes much more voluminous than that of the other side, so much so, indeed, as sometimes to press on one side the heart and mediastinum, and to cause an evident enlargement of the bony compages of that side of the chest.

From these observations it results, that Emphysema of the lungs consists essentially in the dilatation of the air-cells, and that the *extravasation* of the air on the surface of the lungs, constituting the larger and more prominent vesicles, is a posterior affection, and not necessarily connected with the disease in question. The latter species of lesion is, moreover, one of slight consequence compared with the dilatation of the cells, as we can hope for its removal by absorption, as in other similar cases; whilst we can hardly conceive in what manner either nature or art can remedy the other morbid derangement.—*Philadelphia Ed.*—pp. 82—86.

These observations I wish to confine to the emphysema from internal causes, without at all including the disease mentioned by surgical writers under this name, produced by the introduction of foreign bodies into the trachea, and which disease they describe as consisting in an extravasation of air into the cellular substance interposed between the air-cells. It is indeed true that such an accident, as well as violent exertions of the lungs, in childbirth, &c. can and do sometimes produce emphysema of the neck, chest, &c.; but such an affection can only arise from rupture of the bronchial tubes or air-cells: and I am disposed to believe that in no such case is there any actual penetration, by the extravasated air, of the interlobular cellular substance of the lungs themselves.—p. 88.

The general symptoms of this affection are rather equivocal. Dyspnœa being its most striking feature, it is one of the diseases usually confounded under the name of asthma. In it the respiration is habitually impeded, but is aggravated by occasional paroxysms

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which are quite irregular in their return and duration. Like dyspnœa from any other cause, it is further increased by the usual causes, such as indigestion, mental emotion, elevated situation, violent exercise, especially that of mounting, &c. It is unaccompanied by any fever, and the pulse is, for the most part, regular. When the affection exists in a high degree, the skin assumes a dirty aspect, with a bluish tint in some places, especially the lips. In all the cases I have seen there was a slight degree of habitual cough, with a very slight mucous expectoration. The complaint often exists from childhood, and does not seem materially to abridge the duration of life. Like other dyspnœas it frequently, in the end, gives rise to hypertrophia or dilatation of the heart.

When this disease occupies only one side, or exists much more in one lung than the other, this side is evidently enlarged, and the intercostal spaces wider. It also yields a more distinct sound on percussion. When both sides are equally affected, the chest yields a very distinct sound throughout, and presents a more rounded outline, both before and behind, than is natural in the sound state of that cavity.

The pathognomonic sign of this disease is furnished by a comparison of the indications derived from percussion and auscultation.—The respiratory murmur is inaudible over the greater part of the chest, and is very feeble in the parts where it is audible: at the same time a very distinct sound is produced by percussion. If the disease is not very severe, the sound of the respiration is still audible, but in a much less degree than the sound on percussion would lead us to expect. There is also heard, in the affected parts, an occasional slight sibilous rattle.

The single circumstance—of the absence of the noise of respiration in a chest, which sounds well on percussion,—is sufficient to distinguish emphysema of the lungs from any other disease of the chest except pulmonary catarrh and pneumo-thorax. We have already made some remarks on the distinction between the former disease and emphysema; and may repeat, that the general symptoms are sufficient to enable any one to discriminate them. The means of distinguishing emphysema from pneumo-thorax will be noticed under the account of the latter disease.

It is difficult to account for the absence of the sound of respiration, in a disease which consists essentially in dilatation of the air-cells, and in which, consequently, there exists more air than is usual in the lungs. The fact is, probably, accounted for by the temporary obstruction of the bronchia by the increased mucous secretion which usually accompanies this disease, and by the partial compression of the air-cells by those dilated. This supposition is corroborated by the fact, that persons affected with this disease have their breath much oppressed, in the first instance, when they chance to catch cold; while the respiration improves immediately after the expecto-

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ration commences, and even becomes better than before the catarrhal affection.—pp. 237–8.

This is a new disease, at least in practical medicine. It is only by the progress of pathological knowledge that we can hope for a true nosology. Under the term *Asthma*, as many very different diseases are confounded as under the term *Consumption*. It is hoped that the present work will be of no small use in leading to the discrimination of diseases, which cannot be confounded without the greatest injury to the subjects of them. Our author, unlike some of his countrymen, does not range all asthmatic affections as consequences of disease of the heart, although he evidently considers the disease as much more frequently symptomatic than idiophatic. If the term is to be retained in medicine, it ought to be restricted to the idiophatic or spasmodic variety; or used as the generic name comprehending the various species symptomatic of Bronchitis, Diseased Heart, Emphysema and Œdema of the Lungs, &c. as well as the nervous or the idiopathic, so well described by Dr. Bree. *Translator's note.*—p. 306.

2.—PERICARDITIS.

PERICARDITIS is inflammation of the serous membrane which lines the fibrous sac of the pericardium, the heart and large vessels. It may be either acute or chronic. This inflammation, like that of all membranes of the same kind, is marked by redness, more or less deep, a concrete albuminous exhalation and a sero-purulent effusion. The redness is almost always but slight in the acute disease. When it exists, it is for the most part only partially. It is most commonly punctuated, and looks as if the surface of the membrane was covered, here and there, with little specks of blood very close to each other. I have never perceived that this redness was accompanied by any thickening of the part. In some cases, wherein, to judge by the thickness of the false membranes, the inflammation appears to have been very great, no redness whatever can be discovered on the serous membrane, on removal of the membranous exudation. This concrete albuminous exudation commonly invests the whole surface of the pericardium, as well on the heart and large vessels, as on the sac. It rarely presents the appearance of an equable membranous layer, like the false membranes of pleurisy; on the contrary, its surface is most frequently marked by a great number of rough and irregular prominences. Sometimes the knobbed appearance of this exudation is very like what would result from the sudden separation of two pieces of slab joined by a pretty thick layer of butter; at other times, it is more like the internal surface of the second stomach of the calf, an observation made, in one case, by M. Corvisart. In certain cases this aspect of the false membrane has given rise to a singular error, having been mistaken for a variolous eruption in subjects dead of the small-pox. The consistence of this exudation is usually greater than that of the false membranes

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of pleurisy; it is also thicker, and more firmly adherent to the subjacent parts; its colour is, however, the same, being of a pale yellow analogous to that of pus.

The serum effused in inflammation of the pericardium is limpid, of a pale yellow colour, or slightly brownish. It contains few fragments of semi-concrete albumen; at least, it very rarely contains enough of these to give it a milky and turbid character. The quantity of this effusion is usually considerable in the commencement of the disease, often as much as a pound. M. Corvisart found it, in one case, to amount to four pounds. It would seem that the quantity of effused serum diminishes quickly, as soon as the violence of the inflammation begins to subside; as we usually find the proportion of serum and albuminous exudation nearly equal, while in pleurisy and peritonitis the serum is commonly from twenty to fifty times greater than that of the extravasated lymph. Very commonly even, in very violent cases, we find no effused serum, and only a thick and highly concrete albumen filling the whole cavity of the pericardium, and uniting the heart and large vessels to the exterior or loose portion of this membrane. In this case we may suppose that the effused serum has been quickly absorbed, and the two layers of false membrane cemented together; although it is not impossible that, in some cases, the more solid exudation may be the only one. We have seen that the same thing occasionally takes place in certain partial and sub-acute inflammations of the pleura; and several observations have led me to believe that the cartilaginous patches that sometimes are met with on the exterior of the lungs (see page 51 and page 132) are produced in the same manner.

When the disease terminates favourably, pseudo-membranous exudation, after a certain time, is converted into cellular substance, or rather into laminæ of the same nature as the serous membranes; that is to say, the laminæ are double, the exterior surface being exhalent, and the interior cellular, or adherent, and containing the vessels distributed to the part. Sometimes these laminæ are long, sometimes so short that the pericardium seems intimately adherent to the heart.

Before the conversion of false membranes into cellular tissue was well understood, the adhesion of the pericardium to the heart was regarded by divers authors as a cause of various and serious complaints. Lancisi and Vieussens considered it as constantly causing palpitation; Meckel, as rendering the pulse habitually small; and Senac, as productive of frequent faintings. Even M. Corvisart himself has fallen into some mistakes on this head. He admits three species of adhesions,—all of which I have just described as mere varieties or stages of the same affection. These are, 1st, a demi-concrete albuminous adhesion, which is the only one recognised by him as the consequence of pericarditis; 2nd, the very intimate or close cellular adhesion, deemed an effect of gouty or rheumatic affections; and 3rd, the extended or long cellular adhesion, the cause of which is not assigned by him.* M. Corvisart is further of

*See Treatise on the Heart, &c. by M. Corvisart.

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opinion that no person can live, and preserve a good state of health, who is affected with a complete and close adhesion of the pericardium to the heart, or of the lungs to the pleura.

I have, however, met with many cases where this condition of parts was found after death, in which no disorder of the respiration or circulation existed during life. A case adduced by M. Corvisart in support of his opinion (op. cit. p. 34) appears to me rather conclusive against it, inasmuch as the appearances on dissection showed sufficient lesions in other organs to account for the symptoms referred by him to the adhesions between the heart and pericardium.

Sometimes, though rarely, the inflammation is confined to a part only—sometimes a very small part—of the pericardium. These partial inflammations are in proportion to the general, in point of frequency, hardly as one to ten. Their anatomical characters are precisely the same, only that the albuminous exudation is in them confined to the inflamed part. The serous effusion is sometimes as abundant as in the general disease, more commonly, however it is less. The inflammation in this case almost always terminates in being cured, by the transformation of the pseudo-membranous exudation into long serous laminæ; scarcely ever are these partial inflammations followed by the intimate adhesion of the parts.

We frequently find on the surface of the heart opaque white patches, sometimes as large as the palm of the hand, more commonly one half or one third this size, and often very small. They are nearly of the thickness of the nail, and have a degree of consistence equal to that of the membranes composed of condensed cellular substance, as, for instance, the exterior membrane of the lymphatic glands. They adhere so closely to the parts on which they lie, that it is difficult to ascertain, even by dissection, whether they are situated above or beneath the fine membrane covering the heart and great vessels. M. Corvisart is of opinion that they are beneath it. I have, however, ascertained the incorrectness of this opinion, as I have several times been able to remove the patches, leaving the serous membrane of the pericardium still untouched.

Are these patches the effect of partial pericarditis and the consequent conversion of the effused lymph into a condensed membranous cellular tissue? M. Corvisart considers them as produced without previous inflammation, and seated, as I have already said, beneath the serous surface of the pericardium. Both these notions are, I think, inadmissible, inasmuch as there exists no example of an albuminous exudation on the adherent surface of a serous membrane, and as facts without number prove that pseudo-membranous exudations are always the produce of inflammation.

I have lately met with a case which appears to me to throw some light on the question of the origin of these spots. In a man dead of peripneumony, I found a thin false membrane, very firm and of a yellowish colour, investing the right auricle and a portion of the ventricle of the same side, all the rest of the pericardium being

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quite free, only containing in its cavity two or three ounces of a transparent and slightly yellow serum. Some parts of the false membrane, particularly on the auricle, were of a whiter colour and firmer than the rest, and exhibited an appearance almost the same as the white patches above described.

Chronic pericarditis is always general, occupying the whole internal surface of the serous membrane. This is commonly much redder than in the acute disease. The redness is formed by the close approximation of minute points, which look as if applied with a pencil. Rarely the chronic disease is accompanied by a pseudo-membranous exudation; and when this exists, it is thin, soft, friable, and entirely resembling a layer of very thick pus. In every case there exists a more or less copious effusion of a turbid, milky fluid, sometimes having quite a puriform character. I am led to believe that the close adhesion of the pericardium to the heart, is commonly the consequence of the absorption of this fluid, and that the adhesion by the long lamine is the product of the acute disease. In one case I found a close and general adhesion of the pericardium to the heart and large vessels, by means of a false fibro-cartilaginous membrane, in every respect like those of the pleura.

From one case, cited by M. Corvisart, I am led to believe, that there may occasionally arise, subsequently to chronic inflammation of the pericardium, a tuberculous eruption similar to those frequently formed in the false membranes of the pleura and peritoneum. "The portion of the pericardium," he says, "which invests the heart, was of a greyish colour, thickened, unequal, wrinkled, crisp, and containing granulations of which the summit seemed ulcerated." I am rather led to consider these *granulations* as tubercles, because in the same subject "both lungs, although crepitous, were *granular* throughout." (Op. cit. obs. vii.)

In many cases of pericarditis, especially in the chronic disease, the muscular substance of the heart has lost its colour and become whitish. This loss of colour is sometimes attended by a notable degree of softening, and, at other times, the consistence is natural. Most writers have regarded this loss of colour as a mark of the inflammation of the heart itself, and most of the examples recorded of Carditis are merely cases of inflammation of the pericardium accompanied by this loss of colour. A great number of those collected by M. Corvisart are of this kind. For my own part I am disposed to doubt the correctness of the opinion that refers this loss of colour to inflammation. We can never be sure of the existence of inflammation in a muscular organ unless we find a deposition of pus among its fibres.—pp. 197—201.

1. *Acute Pericarditis.* There are few diseases attended by more variable symptoms, or of more difficult diagnosis, than this. Sometimes it appears with all the symptoms of a very violent disease of the chest; at others times it proves fatal without leading us, in the

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least, to suspect its existence. Again, we find cases marked by all the symptoms usually attributed by nosologists to this disease, and in the subjects of which, after death, we discover no traces of its existence. The same difficulty is acknowledged, or at least encountered, by most practitioners. Corvisart attributes the difficulty to the circumstance of pericarditis being almost "always complicated with pleurisy, peripneumony, or some other disease of the chest, which marks its peculiar symptoms." These complications, which are very common, must, unquestionably, have this effect where they exist; I must, however, confess, that the most completely latent affections of this kind that I have met with, were in subjects whose thoracic viscera were, in every other respect, quite sound, and who had died of disease of the abdomen. These facts seem to prove that inflammation of the pericardium is sometimes a local affection of little violence, and of very inconsiderable influence on the general system or even on the circulation; while, in other cases, it is accompanied by an acute fever, and by such violent disorder of almost all the functions, as to compromise the life of the patient.

M. Corvisart is likewise of opinion that it is when the disease is very acute, that the symptoms are very obscure. "Its invasion," he says, "is sudden, its progress rapid, its termination almost instantaneous." When it exists in a less violent degree, but still acute, he thinks that it can be recognised by the following symptoms: viz. sense of heat in the region of the heart; great difficulty of respiration; greater colour of the left cheek than the right; pulse at first frequent, hard, and rarely irregular,—becoming about the third or fourth day, small, hard, contracted and often irregular; great anxiety, slight palpitations, partial faintings; *peculiar* change of features; and (towards the close of the disease) total or partial cessation of the local pain.

These symptoms are certainly sometimes present in pericarditis; but each, or all of them may be absent, and some of them are very rare. I have never observed the increased colour of the cheek, have rarely heard complaints of local heat or pain, and, in place of the progressive increase of irregularity in the pulse (as described by M. Corvisart,) I have uniformly found this irregularly intermitting, wiry, and almost insensible, from the very commencement of the disease.

I must admit that the stethoscope scarcely furnishes us with any more certain signs of this disease. The following appear to me to be the most common symptoms of the inflammation of the pericardium, when not latent: the contraction of the ventricles yields a greater shock, and sometimes a more marked sound, than usual, and, at intervals, feebler and shorter pulsations are perceived, which correspond with intermissions of the pulse, the smallness of which contrasts remarkably with the strength of the heart's pulsation.—When these symptoms come on suddenly in a person who had never been affected with disease of the heart, there is great probability of

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their being the consequence of this disease. In addition, it is further common for the patient to have much dyspnœa and very great anxiety; and to suffer syncope on taking a few steps, or on moving suddenly in his bed.

2. *Chronic Pericarditis.* The signs of this variety are still more uncertain than those of the acute disease. I have attended several cases which I considered, throughout their whole course, as chronic inflammations of the pericardium, but which almost all were cured. In two or three cases only have I been able to verify the correctness of my diagnosis by examination after death; whilst very frequently I have found the pericardium full of pus and in a true state of chronic inflammation, without having been at all led to suspect such an affection. In the cases which have occurred within the last three years, I have found the symptoms to be precisely the same as in the acute disease, only less violent. From one to two years has elapsed before a cure has taken place; and when this has been effected the action of the heart and pulse has become natural and regular.–pp. 273–375.

3.—SOFTENING OF THE HEART.

This enlargement of the heart is always attended by a considerable increase of its consistence, except when conjoined with another affection of this organ, to be noticed presently, viz: *softening of the heart.*—p. 165.

I have already noticed this condition of the heart. In it the muscular substance is sometimes so soft as to be almost friable, the fingers passing easily through the parietes of the ventricles. Whatever may have been the patient's disease, the heart is rarely filled with blood, and the ventricles equally collapse whatsoever may be their varying thickness. This affection of the heart is almost always attended by some change of colour in the organ. Sometimes this is deeper, and even quite violent; and this is particularly the case in fevers of the kind named *adynamique* by Pinel. More commonly, however, the softening of the heart is attended by a striking loss of colour, so as to resemble the palest dead leaf. This pale or yellowish tint does not always occupy the whole thickness of the heart; sometimes it is strongly marked in the central portions, and very little on the exterior or inferior surfaces. Frequently the left ventricle and interventricular septum exhibit this appearance, while the right ventricle retains its natural colour, and even a degree of firmness greater than natural. Again, we sometimes find here and there spots of the natural colour and consistence in hearts which are, every where else, much softened and quite yellowish. This variety of yellowish softening is particularly observable in those cases where dilatation is conjoined with a slight degree of thickening. It is also found in simple dilatation, although it is more common to find this state accompanied by that species of softening which is marked by an augmentation of the natural colour of the organ. There is a third

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variety of softening of the heart, which will be noticed in another place, and which is attended by a pale white colour of the muscular substance. In this, the degree of softening never reaches that of friableness; often it is scarcely perceptible; but the parts are flabby, and the parietes of the ventricles quite fall together on being opened. This condition will be noticed under the head of *inflammation* of the pericardium, as it is peculiar to that disease.

It would seem that the softening of the heart discovered in subjects whose death has been very gradual, is an acute affection; it is evidently still more so where it exists only partially in the substance of the organ. On the contrary, in cases where the heart is softened and yellowish throughout, it is probable that the affection has existed for a long time. The deep-coloured softness observed in subjects dead of fever, may, I think, be compared to that adhesive softness of the other muscles often observed in these cases, and which is also accompanied by a degree of redness greater than natural. This softening of the heart, as well as the analogous *gluey* or *fishy* (gluant ou poisseux) state of the muscles, is particularly observable in putrid fevers, particularly when these exhibit the phenomena formerly considered as marks of putridity—viz: livid intumescence of the face, softening of the lips, gums, and internal membrane of the mouth, black coating on the tongue and gums, earthly aspect of the skin, distended abdomen and very fetid dejections. I cannot assert that this softening of the heart exists in all kinds of continued fevers, but I have met with it constantly in such cases as I have attended to. Could it account for that frequency of pulse which exists, sometimes for several weeks, in convalescence from fevers, although the patient continues to regain flesh and vigor?—pp. 171–2.

Cases of total softening of the heart are usually accompanied by a certain degree of cachexy, even when the individuals are otherwise in tolerable health. When such subjects are attacked with dilatation or hypertrophia of the heart, as almost always happens, they do not present the usual swollen and livid state of the face observable in other cases of this sort.

When softening exists along with dilatation of the ventricles, the sound produced by the contraction of these cavities, although loud, is yet dull, and without the clearness which attends common dilatation. When it is complicated with hypertrophia, the sound of the contraction of the ventricles is so obtuse as to be nearly inaudible; and in extreme cases, the impulse of the heart is attended by no noise whatever.—p. 271.

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Art. V.—*Notices concerning the Dengue.*

1. Editorial Remarks.

The physicians of the middle and northern states have learned through the newspapers, that within the present year, a febrile disease, exhibiting some novel and peculiar symptoms, has been epidemic in the West Indies and in the Southern border of the United States. From the Spanish inhabitants of the former, it has received the appellation of *El Dengue* or *affectation*, for what reason does not clearly appear. The physicians of the region where it has prevailed have not yet bestowed upon it an appropriate name, and perhaps it is not, in reality, entitled to such a distinction, for it may be nothing more than a modification of the great autumnal endemic of the South.

No case of this malady has fallen under our observation, and, as far as we have heard, it has not extended north of the 34th degree of latitude; except on board of steam boats, ascending the Mississippi from New-Orleans.

When on a late visit to a neighbouring town, one of our medical friends mentioned to us a mistake relative to this disease, which deserves to be stated, to the end, that others may guard against a similar error. A gentlemen taken ill, was pronounced by his physician to labour under *Dengue*, and accordingly, treated to his manifest injury, with hot sudorifics, for eight or ten days. At the end of that time, our informant was called into consultation, and found it a well marked case of *inflammatory Rheumatism*, which was cured by copious bloodletting and the usual antiphlogistic means.

We have been favoured by a young medical gentleman of South Alabama, now in this city, with a memorandum concerning this malady, which is inserted below. He has himself experienced it, and witnessed it, repeatedly, in others. We also find in an eastern Journal, just received, a communication from a West India physician, which we shall subjoin, as being the fullest account we have seen.

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2. *Memoranda relative to the Dengue or Spanish Fever, by* Dr. D. W. Vance, of Alabama.

This disease made its appearance in New-Orleans, in the month of June last, and spread rapidly in all directions. It attacked at an early period, the inhabitants of all crowded places, such as taverns, hotels, and steam boats. It affected persons of all ages and colours, and in some cases attacked the same individual a second time, with increased violence. Some observers have told me, that children and females are, in general, more severely afflicted than men; but of this I am not able to say any thing decisive; I have seen, however, that corpulent and robust persons have it more violently than the lean.

My observations on this malady, were chiefly made on board the steam boat General Pike, during a voyage from New-Orleans to Louisville, in the month of August. There were about one hundred persons in the boat, and nearly the whole, including myself, experienced the disease.

Of its symptoms. The onset of the complaint is often severe and distressing. It is attended with flushed face, violent headache, giddiness, soreness and aching of all the bones, dry and harsh skin, in some cases spasms, prostration of strength, and high fever, with a hard, frequent, and full pulse. These symptoms continue, with but little abatement or alteration, for 12, 24, or 36 hours, and in plethoric habits for 48, or longer; during which time, the debility of the patient is extreme, and the aching of the joints in the worst cases, almost as great as if they were luxated. The nervous system, in all instances, seems to be greatly and generally disturbed; and it frequently leaves the intellectual functions in a state of debility and confusion. It has been sometimes mistaken for ordinary bilious fever, and treated accordingly, with very bad effect.

Of the cure. The remedies found most successful in the Dengue, are all of a mild nature. The most efficient are lemonade, herb teas, demulcents, and other diaphoretics; with a gentle cathartic. When spasms occur, laudanum, ether, and other diffusible stimuli are required. External applications have done good in some cases. Brandy and a liniment

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composed of burnt brandy simmered with olive oil or spermaceti, with frictions, are the means which I have seen employed externally. The warm bath has also been useful, especially when there was a tendency to spasms. Very different, however, is the effect of the cold bath, which as far as I know, is highly prejudicial. I have, indeed, seen it prove fatal in several instances. The lancet has been sometimes resorted to, but with little or no advantage.

When the Dengue recedes, the patient is left for some time with a considerable soreness of the limbs, which, in many cases, resembles chronic rheumatism. Of its effect on the mind I have already spoken.

It is highly necessary for every convalescent from this malady, carefully to guard against taking cold.

Such are the observations which I have had an opportunity of making, on this singular malady.

D. W. VANCE.

Cincinnati, October, 1828.

3. *Remarks on the Dengue.* By DAVID OSGOOD, M. D. of Havana.

[From the Boston Medical and Surgical Journal, No. 36.]

Late in April, the present year, after a continuation of hot weather, with but slight variations, during the different seasons of this and the last preceding year, (1827 and 1828,) a new epidemic fever arose in Havana and its vicinity, which attacked the inhabitants generally, and almost simultaneously.

The same disease took place, earlier in the spring, in the other seaport towns and cities of the West Indies; and in the course of the summer it has appeared in some of those of the United States.

The people of Havana have named this strange fever *El Dengue*, which word signifies, literally, affectation.

During the whole of the last winter and spring, previously to the taking place of this new fever, many of the persons who had lately arrived in this climate were seized with the yellow fever. But as soon as the former began to prevail, the latter disappeared; although the residents, who had usually been exempt from the yellow fever, were seen, as well as the transient subjects, with symptoms resembling those of this latter disease, viz: after sensations of uncommon languor, chilliness, and pain in the tendons of the smaller joints, they were suddenly attacked with a burning heat and redness of the skin, pains in the muscles of the limbs, or pain in the forehead, and a loathing, or vomiting of whatever was taken into the stomach.

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The fever continued for one, two, or three days, and then usually terminated with a free sweating, which freed the patient likewise from his pains. But many after leaving their beds suffered by a renewal of their pains, which in some have become chronic. Others have also had a renewed attack of the fever.

This disease of the season has not proved fatal, except to a few amongst the strangers, in whom the sweating stage of it did not easily take place, or was suddenly stopped by exposure to the open air.

This moderation of the symptoms, in the generality of the subjects, I attribute to a gradual reduction of the vigor of their constitutions, by the influence upon them of the before-mentioned almost uninterrupted continuance of hot weather during all the seasons of the two last years past, and beyond what has happened in former years; which influence has rendered the native inhabitants, as well as the strangers in the climate, liable to be affected in this new way, by the same specific cause that, at other times, has produced the yellow fever in the latter class of the subjects.

The Dengue has, as yet, only prevailed in the places to which the yellow fever has been limited. It has not spread into the interior of Cuba, although at the end of five months from the time of its rise in Havana, it continues to attack most of the persons who come to the city from the country, or from any place where it has not prevailed.

2. The fatality of the yellow fever is known to be the greatest in the most robust of its subjects; and in those who, besides their recent exposure to the air of the West India climate, indulge themselves in hard drinking, or fatigue themselves by much exercise in the sun, whereby their strength is *suddenly depressed.*

3. On the contrary, with a slight typhus infection contracted in a close prison, where hard drinking, or taking long walks, cannot be practised, the additional influence of the air of the climate, when it has caused a fever by sudden exposure to it, the symptoms have generally been very mild.

4. The late comers to the West Indies from the colder latitudes, experience, soon after their arrival, a degree of exhaustion, and soreness in their muscles, like that which persons every where feel after violent exercise, or very great fatigue.

The debility and soreness of the muscles and tendons in the subjects with the dengue, before and after their symptoms of fever, may be attributed to the same cause.

5. In several instances, since the prevalence of the dengue, the worst symptoms of the yellow fever have supervened on those of the former.

I may also mention, here, that I know several persons now long residents in this place, who since arriving here from abroad have escaped from an attack of the yellow fever, and have not hitherto been attacked by the dengue; whereas every other person to whom I put the question, "Have you had the dengue?" answers "Yes."

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From the facts, &c. above stated, I have been led to consider the specific cause of the disease of the present time, and that of the yellow fever, to be the same. The subjects have become altered in their constitutions; but the generating cause both of the new and of the old fever, remains unchanged.

Although aware that this opinion may be thought too theoretical, yet I venture to advance it for the sake of a practical inference to be drawn from the viewing of it in this light.

In the dengue, as before noticed, when a sweating takes place, it carries off the burning heat and redness of the skin, and at the same time the loathing and sickness of the stomach. Hence, for the most part, no other than the antiphlogistic treatment has been found beneficial to the patients; but for the few in whom, under such treatment, a sweat has not easily flowed by the end of the second, or the beginning of the third day, the more active, and especially depleting means as in the yellow fever, have been found requisite.

But as the black vomit, the most dreaded symptom of the yellow fever, cannot, with certainty, be overcome by any remedy received into the stomach, to act directly upon that organ, we may take a hint from the dengue, and regard the affection of the stomach as being sympathetic with that of the skin, in its burning state. Agreeably to this idea, it is well known, that, by means of tepid emollient fomentations and clysters, and such diluting drinks as are best calculated to remove thirst, perseveringly employed early in the disease, and at a later period of it by more stimulating applications to the skin, the black vomit has often been prevented, and sometimes stopped

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MISCELLANEOUS INTELLIGENCE.

I.—Analectic.

1. *Ligature in Nævi Materni.*—Mr. Lawrence, surgeon to St. Bartholomew's hospital, communicates a number of cases of this nature successfully treated by ligature by himself and Mr. White, surgeons to the Westminster hospital, from whom he learned this mode of treatment. The cases to which it is applicable, together with the mode of operating, may be learned from the following case, selected from a considerable number.

Case. I.—J. B. an infant four months old, was brought to St. Bartholomew's Hospital in February, 1827.

At the time of birth, a slight reddish discoloration of the skin, as large as a sixpence, was observed at the upper part of the back; this red spot was not elevated. Having remained of the same size and in the same state for three months, it began to enlarge, became elevated above the surrounding sound skin, changed its colour from red to a dull purple, and frequently discharged blood from openings on its surface. It continued to grow rapidly until the time of admission, when it presented a circular tumour five inches and a half in circumference, and projecting about three quarters of an inch. Its surface was slightly irregular, of nearly uniform prominence, and a little depressed in the middle; it was rather larger at the edge than at the base, which rendered the application of the ligature easy. It was of the kind denominated by Mr. Wardrop, subcutaneous nævus. Although the skin had been distended and thus rendered thin by the growth of the tumour, it could be easily pinched up into folds on the surface, so that the disease was decidedly below the integuments. Its connexion to the muscles of the back was equally loose, and it could be moved from side to side with the greatest ease, or drawn up by the finger and thumb, and detached from the subjacent parts. It had a mottled appearance, being mostly of a dark livid colour.—It was soft, and gave a sensation to the fingers like a collection of varicious vessels. Pressure diminished it considerably, and made it of lighter colour; it soon filled again. When the child cried or strained, it became larger and of a deep purple tint.

On the 17th of February I tied the tumour, elevating it from the muscles of the back with one hand, while I passed a large curved needle under the middle of its basis with the other, carrying the point of the needle in and out again, close to the edge of the base of the swelling. When the needle had been cut out, the two ends of the ligature, which had been left of equal length, formed two dis-

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tinct ligatures applicable to the immediate purpose of the operation. They were then tied, as tightly as they could be drawn, just in the line of distinction between the tumour and the sound skin. The firm pressure thus made on the base caused a cracking of the tumour at the surface, from which a few drops of arterial blood escaped before the ligature was quite tight. The infant seemed to suffer considerably when the ligatures were tied, the process being attended with considerable dragging and stretching of the surrounding skin, which was thrown into several large folds. A soft rag dipped in cold water was laid over the part, and occasionally moistened. For thirty-six hours the child was restless, crying almost incessantly and occasionally convulsed; at the end of that time it took the breast, which it had previously refused. An inconsiderable oozing of blood took place. On the 9th I sliced off the tumour, which had become almost black. The ligatures were quite loose on the 20th, and I removed them. A large slough occupied the centre of the wound, extending deeply; it came away in a few days under the application of bread poultice. The wound then granulated and assumed a perfectly healthy appearance, all the unpleasant symptoms having subsided after the removal of the ligatures. The process of cicatrization was slow, but it was at last firmly completed; and the former situation of this large tumour is now denoted by a very slight scar.

The substance of the tumour, when it was sliced off on the 19th, was tolerably compact: its cut surface presented the sections of numerous blood-vessels, apparently venous, filled with coagulated blood: the largest were equal to an ordinary writing quill. These vessels were connected by a firm grayish substance, of a somewhat fibrous texture. There was no appearance of cells.

What is the nature of such vessels? The colour of the part during life, the size of the tubes, and the appearance of their coats lead us to suppose that they are veins. How then does it happen that the profuse bleeding, which takes place when the tumour is cut, is arterial? And how is it that the growth of such structures is arrested, and their absorption produced by tying the principal artery of the part?—*Amer. Med. Rec. No.* 44.

2. *Acupuncture in Rheumatism* has been extensively practised by Dr. Elliott, in private and at St. Thomas's Hospital. He thinks one needle allowed to remain an hour or two in a part, is more efficient than several used but for a few minutes.

Three or four applications to each painful part are generally required, and he has known the disease not yield until the ninth.

Out of forty-two cases taken from the hospital books in succession, thirty were cured.—*Ibid.*

3. *On the Treatment of Colica Pictonum.* [*By M. M. Chevalier and Rayer.*]—Three principal indications present themselves in

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the treatment of poisoning caused by the salts and oxides of lead, and particularly in the colic produced by that metal. The first is to neutralize the poison by the internal administration of hydrosulphurous water, in quantities proportioned to the known or presumed quantity of the noxious matter which has been received into the system. M. Rayer has employed the water of Enghien in his experiments with success. An artificial water, prepared according to the formulæ, No. 1 and 2, may also be employed.

No. 1. Take eight gallons of water, and thirty-five fluid ounces of water saturated with hydrosulphuric acid, to which has been added ten grains of the subcarbonate of soda previously to the saturation. Mix.

No. 2. Take four grains of sulphuret of potass, and dissolve it in thirty-five fluid ounces of water.

The good effects of these fluids are in an inverse ratio to the time which has elapsed since receiving the poison. Many obstinate cases of colic from lead have rapidly recovered under this treatment.

The second indication is to combat constipation when it exists. This is accomplished by purgatives of a strength proportioned to the degree of the constipation. Pills of equal quantities of jalap and scammony should be repeated until copious evacuations be produced. In cases of obstinacy, a lavement of infusion of senna and caster oil should be administered.

The third indication is to allay the pain and to procure sleep: for which purpose eight or ten drops of laudanum of Rousseau, or a grain and a half of opium, should be given.

Under this plan of treatment, the disease rapidly disappears, sometimes on the second day, often on the third or fourth, and it rarely continues beyond the sixth.

M. Rayer has never seen a relapse, although he has thought proper to retain some of the patients in the hospital for several days after their recovery.—*Journal de Clinique Medicale.—Ibid.*

4. *Obstruction on the arteries.*—This was a case of gangrene of the left leg, arising without any obvious cause—the circumstances of the case led to the operation of amputation, which was performed by Mr. Syme. The patient died in a short time after, and on dissection the right internal iliac artery was found entirely obstructed from its origin, as were also the right and left internal iliac veins. The left femoral was pervious to the ligature, but the profunda and corresponding vein were firmly obstructed, also the same vessels on the right side. The whole of the arteries appeared to be in a healthy condition as to texture. Mr. Syme's opinion of the case is, that it was one of acute inflammation of the arteries, and in conclusion, ventures to suggest "that obstruction of arteries, as a consequence of effusion from their own coats, may not be so rare an occurrence as it would seem to be, from the extreme rarity of such cases on record."

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5. *Encephalitis cured by Acupuncturation.*—G. Grassi, after being for a long time subject to frequent fits of dulness, caused by cerebral congestions, and which was removed by bleeding and purging, was seized with apoplexy, with hemiplegia, loss of voice, grinding of the teeth, irregular breathing, intermittent and sometimes scarcely perceptible pulse, without any signs of gastro-intestinal irritation. Repeated bleedings and purges brought him back to a pretty good state of health. At the end of some months all symptoms of local affection had disappeared; the pulse was regular; the voice a little returned, as well as the movements of the affected limbs in part, when Dr. Strambio proposed electro-puncturation to complete the cure. Dr. Fantonelli performed this operation, which was done by inserting a needle at the lower part of the neck, on the side opposite to that affected; then another needle into the external ankle of the affected limb; a metallic wire, communicating with two needles, was connected with a voltaic pile of five plates only. The introducing of the needles was not at all painful, but at each shock severe pains and violent contractions were induced in the muscles nearest to the needles, and chiefly in those of the affected side, (at the negative pile the pain was greatest.) After five or six shocks it was stopped, as the pain was intolerable.

The electro-puncturation was repeated three times, with intervals of one day. After the first, the patient felt himself livelier, and moved more freely. At the second trial, he felt some inconvenience; and, on the third, he was seized with violent fever and symptoms of cerebral congestion. Bleedings and revulsives soon calmed this encephalitis, but his former ailments became just as they were before the trials were attempted.—*Giornale Critica di Med. Analitica, Milano.—Ibid.*

6. *Wounds and Ulcers cured by plates of Lead.*—In all wounds, the simpler the treatment the better. This principle of surgery is now so generally recognised, that there remain few practitioners who have not laid aside all multiform and compound applications to sores, and which only retard their cure. Quiet, cleanliness, dressings with lint, either dry or spread with salve, form the basis of treatment now followed, unless in very particular cases. M. Reveille Parise has suggested a still simpler mode of treatment. In a Memoir read some time since at the Academie de Medicine, he states that he had derived the most advantageous results from plates of lead applied to wounds. Guy de Chauliac and Ambrose Pare had before employed, in the cure of ulcers, plates of lead rubbed with mercury; but this means, neglected by men of science, passed into the hands of the vulgar, where it is still occasionally met with. The following fact will show this.

A military invalid had applied to his ulcers a plate of lead: surprised to observe that they regarded his being dressed by this means as a new fact, he said that, twenty years before, having received a

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wound on the field of battle, he cured himself by applying a leaden bullet that he beat out with a flint. He said that this remedy was known to many soldiers, who always tried it when their wounds were not sufficiently bad to go into hospital.

M. Parise, however, has not the less merit in restoring to science a mode of cure which may be very useful. Recent wounds are almost the only ones in which he has tried his plan. His success induced M. le Baron Yvans to repeat the trials; and the great number of people affected with ulcers in the establishment at the head of which he is, gave him great facility to make the experiment.

M. Menon has not seen a sufficient number of recent wounds tried with this means, to speak of its effect; but more than sixty cases of ulcers successfully treated in this way convince him that the plates of lead form the best topical application to ulcers. Among these cases, some have been of thirty years' standing. When they were not completely cured, the ulcer quickly put on a new aspect; its edges thickened, diminished in size, and soon assumed a more satisfactory appearance. It was remarked that several ulcers, which had never been able to be cicatrised, were so by this new method, and that those in which it failed were never cured by any other means: and we may conclude that these last were incurable, and that nature, more powerful than art, resisted the suppression of an evacuation that custom had rendered necessary. At first this method was confined to simple ulcers: emboldened by success, M. Yvans tried it on ulcers evidently in an inflammatory state, and which before he would have treated by topical emollients. He was astonished to see that the lead did not only not increase pain, but the inflammatory symptoms diminished, and shortly the ulcer was in a healthy state. In fact, many cases prove that this substance acts with a promptitude quite surprising in bringing ulcers, foul at bottom and having all those appearances that are implied by the name "ulceres sordides," back to a healthy state. Three or four days have in general been sufficient, and soon after cicatrization has generally begun to take place.

The fact being established that lead, in the form of plates, applied to wounds is beneficial, it would be interesting to know how it acts. Does this lead enjoy any specific property? Can it have within it something peculiar which, changing the kind of irritation of the ulcerated surface, disposes it to heal? Is there any chemical action takes place, from which might result a compound analogous to the acetate of lead which Goulard and others have so much praised? M. Menon thinks not; for it appears that plates of brass, or gold, or silver, have nearly the same results. Lead is, however, preferable, both being cheaper and also more flexible, so that it is modelled more exactly to the surface. M. Menon thinks it acts mechanically, exercising slight compression on the borders of the wound, and keeping in contact with it the pus which many physiologists think necessary to the formation of a cicatrix.

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This mode of dressing consists in the simple application of a thin plate of lead on the ulcer, and keeping it in its place by a bandage. When it is wished to be removed, the surface of the ulcer and the plate are both wiped clean, and again brought into contact. Nothing can be simpler; and it is a great advantage, not exposing the surface of the sore too long to the action of the air. If granulations shoot up too fast, touch them with lunar caustic, or powder them with calcined alum.—*London Med. and Phys. Journal.*

7. *Remarkable disease of the Epiploon.*—The following melancholy case is recorded by Dr. Strambio, in an Italian Journal, (*Annali di Med.*) with the appearances on dissection.

A young woman 18 years of age, after enjoying herself at a carnival ball, began to complain of pains in the right side of the abdomen, which increased in size, and led to the suspicion that she was pregnant. Various medicines were ineffectually administered, and when M. Strambio was consulted, the patient presented the following phenomena:—face pale—pulse hard and frequent—skin burning hot—vomiting when food was taken into the stomach—abdomen large, but more so in the right than in the left side. On examination, several indolent tumours were felt, which were not painful unless strongly pressed. The left mamma was shrunk, and the right more enlarged than natural, as well as hard. There was supposed to be inflammation of the stomach, and depletion was practised, locally and generally, with fomentations, &c. It was found that a tumour pressed on the rectum, and prevented the introduction of a pipe, or the finger. All the symptoms increased in severity, and hydrothorax supervened, with infiltration of the left lower extremity. Death soon took place.

On dissection, a large effusion was found in the chest and also in the pericardium. The omentum, detached from the viscera to which it naturally adheres, was degenerated into an elastic substance, resembling brain rather than fat, occupying the whole of the abdomen, and disposed into masses of various sizes, connected by prolongations of the original omentum or membranous strips. The left kidney, the spleen, the abdominal aorta, the rectum, the ovaries, and the uterus, were involved in this morbid mass. The other organs were unaltered. The disease was considered to be caused by a chronic phlegmasia of the epiploon, excited by a fall which the young woman had experienced about a year before her death.—*Medico Chir. Rev. for* 1828.

8. *Laryngitis.*—In a short clinical report, published by Dr. Martinet, in a late number of the Revue Medicale, an interesting case is detailed, of which we shall give the particulars in this place.

1. *Angina Suffocans.* The author avoids entering into the discussion, whether croup be a disease essentially different from cynanche laryngea et trachealis. The angina suffocans is an inflam-

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mation about the top of the air-passage, and presents some differences, according as the inflammation is seated in one or other part of the larynx or its appendages. The alteration of the voice, the sound of the cough, the distressing paroxysms of suffocation, the kind of expectoration, (when there is expectoration,) suffice to characterize *cynanche laryngea and cyn. trachealis;* while, on the other hand, the tumefaction and redness of the velum palati, tonsils, and pharynx, together with the presence of crusts or exudations of different sizes, on these parts—the difficulty, or even impossibility, of swallowing—the regurgitation of liquids through the nose, these will readily mark the existence of cynanche pharyngea and tonsillaris. Œdema of the glottis may be suspected, when there is a sensation as if a foreign body were placed in the throat, and more especially when by the finger, a kind of ring or ridge is felt surrounding the rima glottidis—attended with extreme dyspnœa. But often there is a complication of all these affections in the same subject.

In some instances, the angina suffocans does not show unequivocal characters of *inflammation*, and then our practice is necessarily embarrassed—some trusting to depletion, some to calomel, and others to emetics and counter-irritation. In this state of vacillation as to the best method of treatment, the patient often dies by the rapidity of the disease, and the derangement which some of the most vital functions in the body experience. The following case will show the path which we ought to pursue, where the subject is young and vigorous. It will also demonstrate the power of art over one disease at least.

Case. Peter Chapion, 26 years of age, of vigorous and sanguineous constitution, came into the Hotel Dieu on the 11th March, being that day seized with acute pain in the throat, about the top of the larynx, quickly followed by difficulty of breathing, and sense of suffocation. Eight ounces of blood were taken from the arm, but the sense of suffocation continued, and made progress, without increase of frequency in the pulse, or elevation of heat on the surface. *Thirty leeches* were applied round the neck, and, the same evening, venesection was repeated to *twenty ounces*. The dyspnœa was relieved by this last bleeding, and the sense of suffocation rendered less imminent. *Mustard pediluvia*. *12th*. The pain at the top of the throat is still acute—the voice is altered from its natural tenor, being much weaker—respiration difficult and sonorous, but not accompanied with much sense of suffocation—tumefaction of the tonsils and uvula—no appearance of albuminous exudation on any part of the fauces—the deglutition is difficult—pain on pressure of the larynx. Some of the physicians, on introducing the finger, thought they felt a swelling about the rima glottidis. There was an expuition of reddish and sanguinolent saliva—pulse easily compressible and very little increased in frequency—heat moderate—countenance indicative of anxiety—great prostration of strength—face neither pale nor flushed, but the circulation apparently impeded—in-

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ability to deviate from the upright posture. *Venesection—blister to the nucha—purgatives—sinapisms to the lower extremities.* This day passed, like the preceding, in a state of constant dyspnœa, with occasional paroxysms of sense of suffocation, not, however, so threatening as to require tracheotomy. *Sixty leeches were applied round the neck*, and a cataplasm over the bites. 13*th*. The sense of suffocation is diminished, and the patient can fill the chest, by a deep inspiration—expectoration very difficult, but changing in character to the muco-purulent form. *Twenty more leeches to the neck.* On examination with the stethoscope, the breathing was heard much more distinctly in one side of the chest than in the other, and the *rale muqueux* indicated inflammatory action of the mucous membrane of the bronchia. From this time, the expectoration became freer, and the dyspnœa less, until convalescence was established.

Remarks. The above is a good sample of that dangerous disease laryngitis. The depletion, except in the first instance, was bold and decided; but the Hotel Dieu physicians deprived themselves of a powerful means of checking inflammatory action, by withholding nauseating doses of antimony and calomel, which increase the intestinal secretions, and save a great deal sanguineous depletion.—*Ibid.*

9. *Enlargement of the Upper Lip.*—In a recent number of the Journal de Progres, Dr. Paillard has drawn the attention of his brethren to the treatment of this peculiar deformity. He observes that this said enlargement is generally considered as an effect, as well as a sign of scrofula. It usually appears in scrofulous subjects, and in that period of life when scrofula prevails—and it generally disappears when the scrofulous diathesis ceases, or is overcome. But we occasionally observe this phenomenon where there is no scrofula in the constitution, and it sometimes remains as a striking deformity, after the other symptoms of scrofula have entirely vanished.

If, in a scrofulous subject, we examine this swelling of the upper lip, we find the cellular tissue more abundant than natural, and infiltrated with a serous fluid—the muscles more pale and flabby than in a healthy subject—the skin very pallid or shining, and, as it were, infiltrated. Sometimes this swelling is covered with ulcerations, which discharge a matter that forms into scabs, which fall off, and are renewed from time to time. The cellular tissue, then, appears to be the seat of this affection. But the treatment differs, according as the complaint is an indication of scrofula, or independent of that diathesis. In the *former* case, local treatment is of no avail, and we must cure the local complaint through the medium of the constitution. In the *latter* case, the local treatment now to be mentioned is efficacious. This operation consists in an incision from one angle of the mouth to the other, along the inner side of the upper lip, and thus, in fact, dissecting away a mass of condensed cellular tissue forming the swelling. The hæmorrhage is very great; but it either ceases spontaneously, or may be restrained by ligature of the

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bleeding vessels. The operation is very painful, but not dangerous, and it removes a deformity which gives a peculiarly stupid cast of countenance to the individual afflicted with it. For the cases detailed in illustration of the above proceeding, we must refer to the Journal already quoted, vol. 3, 1827.—*Ibid.*

10. *Baron Larrey on Fractures.*—By a private communication, we learn that the above mentioned veteran has projected and makes use of, an extraordinary dressing for fractured limbs. He encircles the whole of the member with compresses and bandages soaked in gummy or albuminous substances, which, on drying, form a complete immoveable, and inflexible case for the injured limb. This he applies, whether the fracture be simple or compound, and never takes it off till the cure is completed, whatever may be the degree of swelling, infiltration, or even suppuration, that supervenes. The swelling is either prevented, or subsides, without danger—the infiltration or suppurations are absorbed—and the process of re-union goes on safely. We think it not improbable that, in simple fractures this plan may have some advantages over the splints and bandages now in use. Baron Larrey's apparatus forms a complete shell or mould that adapts itself to every part of the limb's surface, and thus forms a more permanent and imperturbable case for the member, than any apparatus which can be constructed of splints. There is this advantage, also, that the member is never disturbed by subsequent examinations or adjustments—a frequent source of displacement of the bones. But how far this apparatus will apply to compound fractures, especially where there is much laceration of the soft parts, or shattering of the bones, we will not venture to say. We should suppose that it never can become generally applicable in such cases. We understand, however, that some of the Parisian surgeons are adopting the plan of the Baron.—*Vide Journal de Progres, vol.* iv.—*Ibid.*

11. *Physiological and Pathological results of extirpation of the Kidneys.*—[Professor Mayer, of Bonn.]—Passing over the crude speculations of the ancients, respecting the functions of the kidneys, and the role which this function occupies in the animal economy—passing over, also, the instances in which these organs were found wanting in fœtuses and in monsters, we shall come at once to modern times, when experiments have been made with care, and their effects accurately noted.

When Richerand extirpated one kidney of an animal, no inconvenience appeared to ensue; but, when both kidneys were removed, a morbid condition obtained, and death took place in a very few days. In all Richerand's experiments, the gall-bladder was found gorged after death. The principal phenomena which succeeded the ablation of both kidneys, were—Vomiting, tremors, smallness of pulse, urinous odour in the liquids vomited, borborigmi, intermissions of the pulse, coldness of the body—death in three days. On dissec-

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tion, some effusion was found in the abdomen, but no inflammation; venous system gorged with blood—no alteration in the chest—slight effusion into the cerebral ventricles. In some cases, the animal died in a quarter of an hour after the extirpation, and nearly the same symptoms and *post-mortem* appearances presented themselves.

Prevost and Dumas made similar experiments, and they discovered the presence of urea in the blood, after renal ablation. M. Mayer made a number of experiments, of which he has detailed ten, in a late number of a French journal. We shall only give the results, and not the details.

1. The extirpation of both kidneys causes inevitable death of the animal, at various intervals.

2. The principal phenomena observed were tremors; crying apparently from internal pains; and, finally, convulsions and death.

3. There were no well-marked symptoms of abdominal inflammation.

4. The operation is followed by the secretion, in various organs of the body, of a fluid, having all the physical characters of urine.—This secretion takes place, particularly in the abdomen, chest, pericardium, ventricles of the brain, the eye, stomach, and intestinal canal. It even takes place in the cellular tissue of the liver, lungs, muscles, testicles, &c.

This urinous serum was submitted to chemical analysis, and our author's experience coincided with that of Prevost and Dumas, who also detected urea in the blood of animals, after ablation of the kidneys, corresponding with the fact, that men, whose kidneys have been affected with organic disease, have vomited up matters clearly of a urinous character. We cannot, then, says our authors, deny, that a urinous liquid may be formed, under the above circumstances, in various other parts, besides the kidneys—but particularly in secreting structures.

Dr. Mayer thinks it probable that the cause of death, after these experiments, is owing to the irritation of the brain, from the urinous fluid thrown out there.—*Journal Complementaire.—Ibid.*

12. *Section of the Pneumo-Gastric Nerves.* [M. Dupuy. Veterinary School of Alfort.] It is now ascertained, beyond all doubt, that section of the par vagum, on both sides, destroys an animal, say the horse, in a few hours, by paralyzing the muscles about the larynx, and thus causing asphyxia. When death is thus produced, we cannot properly ascertain the real effects of the interruption of the nervous influence on the stomach, lungs, and other organs. M. Dupuy, therefore, in his experiments, opens the trachea of the horse, by which the animal is made to live from fifty to sixty hours. The gentleman in question, has laid some experiments lately before the Medical Society of Paris, in which the effects of the pneumo-gastric section are shown. Thus, the nerves were divided in both sides of a horse's neck, and portions cut away. Tracheotomy was then imme-

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diately performed. The animal was carefully examined at certain periods, and also bled before and after the operation, in order to ascertain the effects of the section on the blood, as well as on various functions. Two hours after the section, there was no alteration in the functions of respiration, circulation, &c. The animal continued to eat as before. In four hours, the breathing was accelerated—the blood from the carotid was now darker in colour than before—the animal ate and drank, but deglutition seemed performed by a convulsive action, and liquids returned by the wound in the trachea. At the end of 16 hours, the breathing was slow and deep—much mucous flowed from the wound in the trachea, and the food returned by the same aperture—the action of the heart is much weakened—arterial blood is now nearly as dark as venous. The fourth examination, at the end of 28 hours, showed no material alteration. At 40 hours from the operation, the animal had great difficulty in swallowing—the blood from an artery was quite black—the œsophagus was felt to be crammed with food—and the horse was comatose. At 52 hours, the breathing was stertorous, and he soon died.

Dissection. There was nothing wrong in the brain. All the parts forming the aperture in the larynx were swelled and red, so that the passage was almost entirely closed. The mucous membrane of the larynx and trachea was red, and otherwise discoloured, but these were considered cadaveric phenomena. The lungs were inflamed and hepatised—the bronchia were filled with mucosities. The substance of the heart was much softened, and its cavities filled with black blood. The œsophagus was filled with alimentary matters, as were the pharynx and nasal cavities. The stomach was filled and distended with food almost dry, and adherent to the mucous membrane of the organ, which was of a red colour. There was no chyme in any of the intestines. The liver was enlarged, and there were several large black spots on the spleen.

From the above, and other experiments of a similar kind, it is evident that section of the pneumo-gastric nerves stops the sanguific-tive (arterializing) process in the lungs—paralyzes the œsophagus --and puts an end to the secretion of gastric juice, and, consequently, digestion, in the stomach.

The experimenter, found, in this, and several other cases, that a peculiar effect is produced on the spleen by these operations—namely that its blood is changed, and capable of *producing* a disease in other animals, when introduced by a puncture, which affects *their* spleens and causes death. The same was found to be the case with the spleens of animals living in marshy countries, where intermittents prevail.—*Ibid.*

13. *On the Effects of Cupping Glasses on the Developement of Vaccine Pustules.* [*Journ. Gen. de Med. Mars*, 1828.]—The members of the Academie Royale de Medecine have been, for some time, endeavouring to prove the effects of exhausted glasses on virus and

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poison inserted into the skin, but they do not appear to have yet arrived at any satisfactory conclusion. Did Dr. Barry's theory of absorption lead to so useful a point in practice as to enable us to arrest the progress of poison inserted into the skin, it would be worthy of some attention, however contrary to the laws of physic it might appear. Dr. Barry, conceiving that the absorbent fluids are driven up towards the heart by the weight of the atmosphere on the surface of the body, was naturally led to suppose that, by depriving any part of that surface of atmospheric pressure, no absorption could go on in that part whilst so deprived. Facts, so far as they have yet been collected, tend to support this opinion, although they prove no more that the fluid in the absorbent vessels is propelled by the weight of the superincumbent atmosphere, than the flow of blood out of a punctured vein proves that the atmosphere *attracts* the fluid, against its own gravity, out of the punctured vessel. The committee appointed by the Academie to examine Dr. Barry's experiments, found that no absorption went on under a vacuum; that, in fact, if poison be inserted into the skin, and a cupping glass, with the air exhausted from it, be applied over the part, the absorption of that poison into the system is prevented. M. Itard, wishing to satisfy himself of this fact, repeated the experiment, not by inserting poison, as Dr. Barry did, but by inoculating the part with the vaccine virus. He vaccinated a child on the shoulders by several punctures, over some of which he applied glasses, whilst the rest were left uncovered. The punctures which were covered by the glasses formed no pustules, whereas all those which had not been so covered, gave rise to vaccine pustules, possessing the usual characters. M. Bousquet was not satisfied with the result of M. Itard's experiment, so that he determined to repeat it on a large scale, at the bureau of public vaccination of the Academie. M. Bousquet obtained a very different result from that which M. Itard had obtained. In the experiments of the former, the glasses appeared to have scarcely any sensible effect in preventing the puncture from forming a pustule. It appears to be the general opinion among the members of the Academie, that a vacuum produced over the puncture may prevent the action of poison on the system, which generally takes place very suddenly, and in a degree proportioned to the dose; but that it is different with regard to a *virus*, which has the property of reproduction, and whose action is slow.

This subject appears to us easily explained. The application of an exhausted glass to a part will suspend the function of absorption in that part while it remains on. It acts in two ways in doing this; first, by the pressure of its edge on the absorbing vessels running from the part, thereby obstructing the motion of their contents; second, by *expanding these vessels beyond their natural calibre*, thereby suspending their function for the time. The absorbents are naturally intended to sustain the weight of the atmosphere, and when this weight is removed, they necessarily expand, and assume a

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calibre which is not natural to them. The arteries and veins do the same. It cannot be expected that the absorbents, while in this state, can bring their sides together in order to press forward their contents. Let it be tried whether a portion of the intestinal canal will be able to contract so in a vacuum. As the vacuum of a cupping glass suspends the tonicity or contractility of the blood-vessels where it is applied, nothing can be more probable than that it suspends that of the absorbent vessels, whose coats are much more delicate than those of the arteries and veins. The fact appears to be, that the pressure of the atmosphere is natural to all the vessels, as it is to all other terrestrial objects, and that it is one of the causes which determine their physical form; it is also one of the causes which enables them to perform their functions, but it does not follow from this that they act like syphons, more than it does that the intestinal tube acts so.

Now it is not only possible, but also probable, that all the poison, or even virus, may be extracted, in some instances, if an exhausted glass is applied *immediately* after its introduction—that is, if the glass is applied before the poison or virus has entered the extremities of the absorbents. It may, by this means, be washed out by the blood. But should it once enter the extremities of the absorbents, nothing but a retrograde action of these vessels could discharge it again; for, as the edge of the glass extends all round to some distance beyond the wound, and as there is no pressure between the glass and the wound to force the poison back, it must necessarily remain at rest there, unless it can run back under to the law of gravity. The only chance of abstracting the poison when it has once entered the extremities of the absorbents, would be, by using a very small glass, which would barely extend beyond the edges of the wound. It is generally supposed, that, because an exhausted cupping glass extracts blood from a puncture, it must also extract the contents of the absorbents, or any thing else which may be in the wound. But this is by no means the case. The blood is constantly forced by the action of the heart towards that part, as well as towards others; it therefore flows out at the puncture. But as there is nothing to force the contents of the absorbents in a retrograde direction, that portion of the fluid situated between the edge of the glass and the wound will remain at rest, but the fluid situated between the glass and the heart may, and probably does, flow on in its natural course. It is true that the absorbents running into the wound from the distal side of the glass may pour out their contents, but it is not probable that any of the poison enters the divided extremities of these.

Now it would be advantageous to apply immediately an exhausted glass over the bite of a rabid animal, in order to suspend the absorption of the virus until instruments could be procured, and the consent of the patient and his friends obtained, to have the part excised. The absorption of any other virus or poison might be suspended in the same way for a period, to allow time to decide upon

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the best plan of treatment to be pursued. But should excision be considered necessary, all the parts which have been covered by glass should be removed before the patient can be considered safe.—*Lon. Med. and Surg. Journal, No.* 1.

II. Analytical.

14. *Coffee.* In the *third volume* of the *Dict. de Scien. Med.* there is an interesting article on Coffee, by a distinguished French physician, Dr. Nysten. The Arabs were the first who prepared a drink from the seeds of this plant. Its English and French names are derived from the Turkish name *Caouhe.* It is curious to trace the migration of this celebrated plant from the old to the new world. Near the end of the 16th century it was carried by the Dutch from Moka to Batavia, and soon afterwards from the latter place to Amsterdam; whence in 1713 M. Resson introduced it into the green houses of the royal garden, at Paris. From thence it was transported to the West Indies, by M. Declieux, who during his voyage deprived himself of a portion of his own drinking water, to refresh and sustain the young plant. It was first cultivated in the islands of Martinico, St. Domingo and Gaudeloupe.

Dr. Nysten treats of the qualities and effects of Coffee under two heads, *burnt* and *unburnt.* Its effects in the former state being well known, we shall pass over what he says concerning them, to present our readers with a translation of what he has collected relative to the medicinal powers of

Coffee, unburnt. "Coffee not roasted or torrefied imparts to water a greenish yellow colour; from whence is derived the name *lemon* coffee, which has been given to this drink, recommended by Andry (*Traite des alimens du careme*) and by Rostan and Ryhiner (*Acta Helvetica* tom. V. p. 384.) But it is, principally, at a later period, that the attention of physicians has been called, by professor Grindel, to unburnt Coffee; which he regards (*ouvr. periodiques cites*) as a good substitute for the Peruvian Bark. It was at the clinical establishment of the imperial University at Dorpat, in Russia, that this author made his experiments; and it was especially in intermittent fevers, that this medicine was administered to advantage. It was, how-

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ever, given with success as a tonic in many other maladies. M. Grindel has given it in powder, in decoction, and in extract. To prepare the powder, the Coffee covered with water is to be exposed to a moderate fire, until it becomes moist; it is then to be placed in an oven, so temperately heated as not to burn it, and left to dry, when it may be easily pulverized. To make a strong decoction, the author directs us to boil an ounce of Coffee in 18 ounces of water, until it is reduced to six: he advises that we should prepare the extract in earthen, instead of iron vessels.

"Of more than 80 cases of intermittent fever he scarcely found one which resisted the action of Coffee, prepared in one of these modes. In powder, the strongest dose which he gave, was a scruple every two or three hours. It rarely happened that the most obstinate intermittents did not yield to two ounces of this powder. Sixteen ounces of the decoction were found to answer the same purpose. M. Grindel frequently gave the decoction to second the action of the powder. The dose of the extract is variable and similar to that of the extract of cinchona. When we administer Coffee as a tonic, the extract has appeared to M. Grindel to be the best preparation. Among many interesting cases in which this medicine was administered successfully as a tonic, we find that of a man, upwards of thirty years of age, who having been cured of a dropsy of the chest, remained in a state of emaciation accompanied with diarrhœa, which resisted the action of the Bark. After having laid aside for some time every kind of medicine, and finding that the disease still continued, recourse was had to the extract of Coffee, combined with a little opium, and dissolved in water; but the mixture occasioned pain in the bowels, and they afterwards limited themselves to the Coffee alone, in the dose of two spoonfuls a day, dissolved in about six ounces of water. This medicine gradually moderated the disease and improved the condition of the patient, so that when he had taken about twelve ounces at the end of two months, he was quite cured.

"A woman had lost, in a few years, nine children, who had died between the ages of two and three years, of atrophy attend-

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ed, in the close, with colliquative diarrhœa. The tenth, aged eighteen months, was on the point of falling under the same disease. The Bark passed unaltered from the bowels, and other medicines were given without effect, when they resorted to the decoction of Coffee, with a little tragacanth and extract of tormentil. Afterwards, however, they limited themselves to the decoction of Coffee, which was continued for nine weeks, when the child was perfectly cured.

"The facts which we have cited from Dr. Grindel, and which might be collected from the *Bibliotheque Medicale* are sufficient to establish the efficacy of unburnt Coffee, as an excellent tonic and febrifuge."

15. *Respiration of Cold air in Pulmonary diseases.*—In the American Journal of the Medical Sciences, Number 3, and the New-York Medical and Physical Journal, for June 1828, Dr. Charles Drake, of the city of New-York, has published two interesting papers on this subject. He caused patients labouring under various forms and grades of bronchial inflammation, to inhale, for a limited time, an atmosphere, artificially cooled to 50° 40° and even 28° of Fahrenheit; at the same time keeping the surface of the body in a state of excitement and transpiration by means of extra clothing or bed covering. The sedative effect on the pulse was generally decided; and in several interesting cases a speedy cure was effected. Dr. D. does not consider it a remedy for genuine phthisis. He has resorted to three different modes of application. First, causing his patients to breathe through a tube, immersed in pounded ice; or, when he wished to employ air cooled below the freezing point, a mixture of ice and common salt. Secondly, requiring them to respire through a tube connected with the external air, in winter. Thirdly, exposing them to such an atmosphere, so clad as to defend the surface of the body, from its refrigorating influence. Dr. D. inquires, with much plausibility, whether a part of the benefit which the phthisical often derive from travelling, may not arise from their breathing a cooler and fresher air. We recommend his plan to the consideration of the profession.

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16. *Blisters to prevent abortion.*—In the August number (1828) of the *American Journal of the Medical and Physical Sciences*, Dr. Samuel Jackson, of Northumberland, Pa. well known to the profession in the United States, as the author of several valuable papers, has inserted a communication on the efficacy of blisters in preventing ABORTION. He does not, as yet, venture to insist upon them, as a remedy for the miscarriages which occur to the same patients, many times in succession,—and which constitute one of the *opprobria medicorum*,—but as a promising acquisition to the means already in use, for preventing abortion from occasional or accidental causes; and that cases of this kind, too often call for other aid than that which is generally employed, every physician of extensive practice must admit. That Dr. J. may speak to our readers for himself, we shall extract the following interesting case:

"*Case* 2.—About two months since, we were sent for to visit the wife of P. L. in Sunbury, but not being able to attend for some time, we found, on arriving at the house, that our friend, Dr. PRICE of that town had been called. The patient, in the sixth month of her pregnancy, had made a misstep the day before, from which she suffered some pain in her back during the whole night; in the morning she walked out, but found herself worse for it, and, upon returning home, she was seized with bearing pains, followed by such a discharge of water as led her to suppose that the membranes were ruptured: the pain increased, with frequent gushes of water, and by the time Dr. Price had arrived, it was excessively violent, coming on at regular intervals of about five minutes and reaching down the thighs; she had also a severe strangury which obliged her to rise frequently and pass a few drops of urine with great pain. Dr. P. had directed an enema of laudanum, half an ounce, which she had retained without any alleviation, though at least an hour and a half had now elapsed.

The *os uteri* was, as we believed, a very little patulous, there had been some sanguinous show, and after the most careful inquisition, we presumed that the membranes had given way, and the water passed off. The uterus was in its proper site, the pains did not seem to affect it very considerably, and therefore even if abortion were to be considered as finally inevitable, these were not the proper pains to produce it, and hence they were to be subdued if possible. Her pulse was too feeble to admit of bleeding, and moreover she was of a peculiar constitution, and seldom profited by the loss of blood. Solid opium was now given in doses of five grains, with the hope that in conjunction with the enema already taken, it would subdue these pains and prepare the system for the supervention of genuine

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labour. But these potent doses produced very partial, and only temporary relief, and did not fail to bring on severe vomiting, which always renewed the pressing pains. Two indications therefore arose—to subdue the pains, and to compose the stomach. The black drop and paregoric elixir she abhorred, and hence we continued to give solid opium by the stomach, and laudanum by injection; but no sooner did the pain abate under these anodynes, than a dreadful vomiting ensued, which constantly renewed it. We endeavoured to keep the system under the steady influence of opiates, being careful to administer some as soon as the effects of the preceding dose began to subside into languor and sickness; we tried to compose the stomach with ether, elixir vitriol, lupuline, ginger tea, an article we have found of great service in the nausea left by opium. But all these applications were vain; either vomiting or pain, and sometimes both, were continually present, and the state of the poor sufferer was truly alarming. We must confess that in such a case the acetate of morphia, or the denarcotised laudanum ought to have been used, but we had rather unjustifiably neglected to procure these articles, having always found an acetic preparation on the principles of the *black drop*, to answer as a succedaneum to common laudanum.

Here let us observe that we should have applied a blister to the lumbar region at first, had it not been that we looked upon abortion as inevitable, and considered that genuine labour would soon supervene. But now, after a struggle of two days and nights, without any advantage being gained, we proposed to our colleague the application of a blister, and he readily consented, though he acknowledged the practice to be entirely new to him. Just in proportion as the plaster drew, the pain receded, and was felt no more after the blister was fully drawn. So complete was the cure that a tremendous fire the following night, which suddenly consumed a large wooden barn within twenty perches of her house, and alarmed her excessively, did not renew the pains. Even the strangury was entirely removed by the blister, and did not return. She has continued well ever since, and she now feels the fœtus as vigorous as before. She was of opinion that at least half a gallon of water was gradually discharged in the course of the first two days. That the liquor amnii may pass off, and the fœtus survive, is probably incontrovertible, but it certainly occurs so seldom as to be justly considered a very rare exception to the general course of things. That it occurred in this case we cannot by any means aver; the lady may have been deceived in the quantity passed, and the water may have come from one of those collections which authors describe as sometimes existing between the membranes."

In a subsequent part of his paper Dr. J. has the following general remarks on the safety of blistering in the pregnant state, to which we are disposed to extend an entire concurrence.

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"It has been said that blisters are to be avoided as far as possible in all cases of pregnancy, because they are particularly apt to produce strangury in this state of the body, an affection that might be attended with dangerous consequences. But we cannot forbear asserting, that we have never hesitated to apply them on account of pregnancy, and that we do not recollect having ever seen a strangury from them under such circumstances. This exemption may be owing to the care we have very generally had of giving parsley tea or some diuretic during the whole time of their drawing. Last summer a lady in the ninth month of her pregnancy, suffered severely with œdematous legs, and having heard of blisters in such cases, she proposed the remedy herself; we tried to dissuade her from using them, but she did it clandestinely, and had great cause to rejoice in her temerity."

We shall conclude this notice with a reminiscence which cannot be regarded as foreign to it.

The nausea and vomiting attendant on pregnancy, are well known to be sometimes most obstinate and distressing. They may even eventuate in abortion. Some years since, a patient fell under our observation, who throughout the whole period of two pregnancies, had experienced distressing and almost uninterrupted nausea, with great consequent reduction of strength and flesh. She was then in her third term, and affected with the same disturbance of the stomach: In this afflicting situation, a pair of blisters were applied to the ankles, and gave immediate and permanent relief.

17. *Poisoned wounds. Cupping Glasses. Pressure. Ligatures.* In the second number of our Journal, we gave a short analysis of the experiments of Dr. Pennock on the efficacy of pressure in poisoned wounds. In the periodical work just quoted, Dr. Aristide Rodrique has published a series of analogous experiments, performed about the same time by himself. His experiments were made on cats and rabbits, with strichnia, and hydrocyanic acid of the strongest kind. The results were found to coincide with those of Dr. Pennock, and give great support to the opinion, that it is not a *vacuum over the wound*, as Dr. Barry supposed, but *pressure around it*, that preserves the constitution from injury;—and that this pressure, (which in every case may be promptly and successfully made, with-

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out the aid of a cupping glass or a physician) is likely to be successful is extremely probable. The following are his conclusions:

"1st. A vacuum caused over a part under which a poison has been deposited, will prevent such a poison from producing its usual effects so long as this vacuum exists.

"2d. All constitutional symptoms immediately disappear on the establishment of a vacuum over the poisoned surface, and by removing the poison by an incision, the life of the animal may be saved, provided too great a quantity be not previously absorbed.

"3d. The glass does not act by extracting the poison, as may be seen from the experiments with strychnine.

"4th. The ligature, and the glass not exhausted, are equally as effectual, in cases of poisoned wounds, as the exhausted glass."

If cupping glasses and pressure do not extract the poison from wounds (and the latter of course does not) when they preserve the constitution from harm, what becomes of the deleterious substance; and how does it happen, that after an hour, or some other brief period, as in the experiments of Dr. R. the apparatus may be removed and the animal remain unaffected? Can strichnia be decomposed or assimilated, in such a situation, within that period? It would, we think, be difficult to sustain the affirmative of this proposition; and if this be correct, how does it happen, that after the pressure is withdrawn, the general system does not become afflicted? On this subject more light is wanted.

Under the analectic head of this department of our Journal, will be found an article from the 1st No. of the *London Medical and Surgical Journal*, on the influence of cupping glasses on the developement of the vaccine vesicle, to which we beg leave to recall the attention of the reader in connexion with what he has just read.

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In the course of his inquiries, Dr. Rodrigue, three times applied hydrocyanic acid to the trunks of nerves, laid bare, and found that it produced no effect, except in one instance and then in a slight degree, and could be explained by the adhesion to the nerve of a small quantity of cellular mem-

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brane. From these experiments the Dr. "judges that prussic acid has no direct specific action on the nerves," and that it "does not act upon the system through the medium of the nerves." Now this may *possibly* be the case, but the experiments cited are, it appears to us, far from showing it; for, first, the poison was applied to the *neurilema* and not the *nervous matter*, of which alone, sound physiology predicates the faculty of transmitting impressions; and, secondly, it was not applied to the sensible or susceptible extremities, as found in the wounded skin or muscles, or in the healthy surface of one of the membranes, as that of the mouth or eye. That *mechanical* agents, directed upon the *trunks* of nerves, may greatly disturb the economy of the whole system we all know; but, for medicines or poisons, which act on a different principle, to affect the system, through the medium of the nerves, it would seem to be requisite to bring them in contact with their gensient extremities either external or internal. On this subject, we mean the mode in which prussic acid destroys life, there have been facts extant, ever since the day when Gay-Lussac, and Thenard, first presented to the world that, which for the good of mankind they might, perhaps, as well have let alone; and Dr. R. has added to the number, if not the variety of our *data*. Thus he found that a single drop of the acid, introduced into a wound in the thigh of a rabbit, produced violent convulsions in ten seconds, and perfect death in sixty; and that a similar application destroyed another in ten seconds; while a full grown cat, (not easily killed by common means,) expired in a minute, from the application to its *tongue* of a single drop of the poison! This is like the fall of the electrometer, when the charged battery is touched with a conductor:—we refer, of course, merely to the celerity of the operation in the two cases. For ourselves we require no other evidence than these and other facts of the same kind already known, to convince us, that prussic acid *does* exert on the nervous system, when applied to susceptible and unprotected surfaces, a most specific and deadly influence; and that through the medium of this system, it extinguishes life with

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a promptness and certainty, that ought to recommen it to the law givers of every nation, which seeks, in its capital punishments, the death only, and not the the torment of its criminals? This however by the way. As to the *quomodo* when all the functions cease in sixty seconds from the application of a single drop of prussic acid, we confess our utter ignorance: but that the entire nervous function is overthrown by the local impression, we cannot entertain a doubt.

18. *Prize Dissertation on the effects of Ardent Spirits.* The Massachusetts' Medical Society have offered a premium of FIFTY DOLLARS for the best Dissertation on the means of "*preventing and curing the habit of Intemperance.*" It is expected that those who become candidates will "*point out the circumstances in which the abandonment of the habitual use of stimulating drinks is dangerous; and, also investigate the effect of the use of wine and ardent spirits on the different organs and textures of the human body.*" The Dissertation must be sent in by the 15th of April 1829. The committee appointed to examine them, and award the premium, are Drs. John C. Warren, Zabdiel B. Adams, and John Ware.

The object of the Massachusetts' Society is of great interest, and we sincerely hope, that the effort may effectuate something useful to the profession and society at large. But where is the man who is qualified to extend our knowledge of the subject proposed? We do not doubt that candidates enough will press forward; but we hope the society will not content itself with sending forth a digest of common places.

19. *Dr. Mussey on Intemperance.* It is encouraging to observe so many societies directing their attention to the means of correcting the abuse of spirituous liquors. That they are the causes—immediate or remote—of a multitude of diseases, both of body and mind, no physician of observation can doubt. They clearly fall, therefore, within the legitimate scope of the profession; and should attract more of its attention than they have heretofore done.

On the 5th of June 1827, Dr. R. D. Mussey, professor of Anatomy and Surgery in Dartmouth College, and at that

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time President of the New-Hampshire Medical Society, delivered before the latter institution an "Address on Ardent Spirit," which at the request of the Society, was published within the present year.

As this address—respectable of its kind—is in a great measure declamatory, we shall not undertake its analysis, but the following extract which contains the professor's views on the *modus operandi* of ardent spirits, and involves some disputed points in physiology, will not be read without interest.

"What is the secret of this witchery which strong drink exerts over the whole man? I will try to tell you. After being received into the stomach it is sucked up by absorbent vessels, is carried into the blood, and circulates through the alimentary organs, through the lungs, muscles, and brain, and doubtless through every organ of the body. Not a blood vessel however minute, not a thread of nerve in the whole animal machine escapes its influence. What is the nature of this influence? It disturbs the functions of life; it increases for a time, the action of living organs, but lessens the power of that action; hence the deep depression and collapse which follow preternatural excitement. By habitual use, it renders the *living fibre* less and less susceptible to the healthy operation of unstimulating food and drink, its exciting influences soon become incorporated with all the living actions of the body, and the diurnal sensations of hunger, thirst, and exhaustion, are strongly associated with the recollection of its exhilarating effects, and thus bring along with them, the resistless desire for its repetition.

Is evidence required of its being absorbed, and pervading the different organs of the body? Approach within a few feet of the rum or brandy drinker, and the odour of his breath will quickly demonstrate, that the lungs, loaded with the foul liquor, are discharging it with all the energy in their power.

When taken by the nursing mother, it enters into the delicate food prepared by nature for the nourishment and growth of helpless infancy, and in this way, as may most rationally be supposed, produces a relish for an article naturally disgusting, and lays thus early, in some instances, a foundation for intemperance in after life. What physician has not known a nursing mother give a fretful child a good night's sleep, by taking, herself, a dose of brandy at bed time?

Other organs than those destined for the formation of milk, manifest the presence of this article when it is combined with peculiar odours; those organs especially, which are set as waste gates to the system, soon show how foreign it is, and ill adapted to the real wants of the animal economy, by separating it from the blood and taking it out of the general circulation as fast as possible.

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The brain, that most delicate and wonderful organ, which forms the mysterious link between the other forms of matter and mind, the healthy functions of which are essential to vigorous intellectual operation, is capable of imbibing alkohol, and having all its actions suddenly arrested. In point, is the case of the man who was picked up dead in London, soon after having drank a quart of gin upon a wager. He was carried into the Westminster hospital and there dissected. "In the ventricles of the brain was found a considerable quantity of limpid fluid, distinctly impregnated with gin, both to the sense of smell and taste, and even to the test of inflammability. The liquid appeared, to the senses of the examining students, as strong as one third gin to two thirds water."

We know that alkohol, even when diluted, by long contact after death, hardens the brain, as well as the other soft textures of the body which contain albumen; and although the vital principle may enable the brain to resist in a great measure, and for a long time, this effect of alkohol, when brought into it from the stomach by the general circulation, the fact, as alleged by many, and as I am strongly induced to believe from the limited means I have had of observing, viz. that the brains of drunkards are literally harder at death, than those of the temperate, may be considered in strict accordance with the effects of intemperance upon the intellectual functions. If this organ be in any degree hardened by the circulation of diluted alkohol through its minute and most delicately organized parts, it might well be supposed to be less susceptible of those exquisitely balanced actions, which we can hardly help believing do exist in the impressions made by external objects, and in the variety of combinations of them, produced by the more abstract, and retired operations of the mind. That a large proportion of tiplers early discover an unnatural obtuseness of intellect, and that frequently a mind originally quick and vigorous, becomes sluggish and imbecile, need not be told to an assembly of physicians who have had the common opportunities of observing the effects of intemperance.

The stomach and liver of drunkards are generally found to be disordered; the stomach frequently contracted, and the liver much harder than natural, exhibiting an unnatural colour both upon its surface, and throughout its interior texture. This, perhaps, is what might be expected. The stomach receives the liquor, in the most concentrated and active form, in which it is taken into the body.—From the stomach and the alimentary canal below, most, if not all of it, is probably carried through the liver in a state less dilute than when distributed among the remaining organs of the body. The texture of the liver too, which consists merely of vessels and nerves with enough cellular membrane to hold them together, may perhaps serve to show why it is more obviously affected than the alimentary canal, inasmuch as this canal has a distinct, and in some places, a thick muscular coat, independently of its vessels."

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We hope the Professor—in whom we are happy to recognize a former class mate as well as a present collaborator—will continue his able exertions in the cause of *Temperance.*

20. *Dr. Cartwright on Iodine.*—This ingenious and indefatigable physician has inserted in the 44th number of the American Medical Recorder, the results of his experience, and that of some of his friends, on the internal and external use of *Iodine* and the *Hydriodate of Potash.* He has not, he informs us, extended his "inquiry to the effects of Iodine in those diseases in which others have used it, but confined it, with one exception, to certain diseases in which, as far as he is informed, its remediate properties are entirely unknown." This no doubt is a candid statement; but justice requires, that we should say, that as far as we can discover, there is but one or two of the maladies in which Dr. C. has employed Iodine, for which it had not been directed by other physicians, both in America and Europe, before the publication of Dr. C's experience; and even before most of his trials were made. For the evidence of this we need make no other reference, than to the summary of authorities contained in the last edition of Majendie's Formulary, and to our review of it, in the May number of this Journal.

The first enumerated disease in which he found Iodine and its preparations useful is CHRONIC OPTHALMY, to the pathology and divisions of which, he has devoted several pages, that our limits do not permit us to analyse. He uses the medicine both internally and externally, and regards it as a specific in certain forms of the disease. As an external application, he employs an ointment according to the following formula:—R. Pot. hydriod: 3ss adip. prep: 3j. Mix and rub together in a glass mortar. This ointment he applies to the lids, brows and surrounding parts twice a day. We have not ourselves used the ointment of Iodine in opthalmy, but on the authority before us, do not hesitate to recommend it to our brethren. The results of our experience with Iodine internally, in various opthalmias is stated in this Journal (*loco citato.*)

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Doctor Cartwright has also employed Iodine in a case of Iritis, and so far as we recollect, is the only person who has yet directed it in that formidable malady. We shall extract his report of the case.

Iritis.—"A negro girl about ten years of age, belonging to Mr. Bradley of this city, was attacked with inflammation of the iris, in May, 1827. The disease came on without any evident cause. Her *general* health *was* apparently good, and *had been* so, with the exception that her abdomen was protuberant and her pulse somewhat too frequent, the sclerotic conjunctiva, and lining membrane of the eyelids were somewhat turgid with blood, but the turgescence did not extend to the conjunctiva, within the circumference of the cornea. The iris was of a reddish colour, and dentiform processes verged towards the centre of the pupil. The pupil was irregular and dusky. The pain was at no time acute. I gave an emetic, and put the patient on a course of mercurial cathartics, conjoined with antimonial medicines in small doses. The eye got worse. The blue pill, calomel, &c. were used to produce ptyalism, and the temples were blistered. Under this treatment a reddish cloudiness suffused the whole aqueous humour, which gradually turned grayish, the pupil became obscured, and vision was lost. I now recommended the ointment of the hydriodate of potash to remove the turgescence of the conjunctiva, not supposing it would have any effect on the deep-seated inflammation on the iris, and the delicate tissue investing the humours of the eye. She had not been using the remedy more than a week or two, before the turgescence of the conjunctiva disappeared, and the cloudiness of the aqueous humour began to settle down like an hypopion or onyx. The patient at length began to discern bright objects. About this time, before there was much probability of the affected eye becoming restored, the iris of the sound eye became inflamed in the same manner as the other had been. I bled the patient, introduced a seton in the temple, and directed the iodine internally, and the hydriodate of potash externally, and also ten grains of calomel every or every other night, for a few nights. I had now no more trouble with the patient. The inflammation of the iris in the eye last affected was arrested in a few days, and by continuing the iodine and the ointment of hydryiodate of potash a few weeks, vision became perfectly restored in the other eye also.

Dr. John Bell of this city, formerly surgeon of the New-York Eye Infirmary, a gentleman whose judgment is entitled to every confidence, saw the above patient after the last eye became affected, and unhesitatingly pronounced the disease *iritis*.

Scirhous Enlargement of the Spleen.—In the protracted enlargements of the spleen, so common in the paludal districts of the South, and, problematically, denominated scir-

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hous, by our author, has, in imitation of one of his Louisiana friends, Dr. Thompson, directed Iodine with striking success. The same practice has been pursued, simultaneously, by Dr. Milligan and others, in Europe, where our medicine has likewise been used, successfully, in certain enlargements of the liver.

The remaining diseases embraced in his 'Inquiry' are CIRCOCELE, AMENORRHŒA and DYSMENORRHŒA, INQUINAL TUMOURS or BUBOES, and an obstinate DIARRHŒA 'peculiar to the Southern states,' on the treatment of each of which, with Iodine, by himself and his friends, Dr. McPheters and Dr. Thompson, he gives a favorable report; but we have not space to afford for its analysis; and, as we know, that the Profession are at this time actively employed in their trials with this medicine, in an unusual variety of obstinate maladies, embracing several of those enumerated, we consider *such* a notice the less necessary.

III. ORIGINAL.

21. *Cincinnati Eye Infirmary.* At the request of the Surgeon of the Infirmary, the Visitors have appointed Professor Cobb, a consulting Surgeon of this public charity.

22. *Necrology.* DIED, in Paris within the present year, the celebrated Dr. Gall. He was a native of Germany, but had resided, latterly, in France. Whatever may be the fate of Dr. Gall's system of *Phrenology*, his researches into the anatomy of the brain, in conjunction with Dr. Spurzheim, will entitle him to a high rank among those who have adventurously devoted themselves to inquiries into the structure of that most complicated organ. Previously to his death, Dr. G. was extensively employed in the practice of medicine in the French metropolis.

DIED in Cincinnati, on the 14th inst. of Hydrothorax, Dr. E. H. Pierson, aged 57 years. Dr. P. was a native of Jersey, and had resided for the last 10 years in this city, where he was engaged in an extensive practice up to the week of his death. At the time of his decease, he was a Trustee of the Medical College of Ohio, and President of the Board of Health.

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ESSAYS AND CASES.

ART. I.—*Remarks on the Pathological condition of the System, denominated Congestion.* By JOHN P. HARRISON, M. D. of Louisville, Ky.

Independent of the inherent difficulty which attaches itself to every recondite subject of inquiry, there is often a very great hinderance presented to the investigation of some topics of science, by the imprecision and ambiguity of language. Words, being but arbitrary signs of our ideas, are liable to a variety of significations, according to their derivative import, or conventional meaning. As an illustration of this remark, the word Congestion may be adduced. According to its derivation, it means, to heap up or gather in a heap, from the Latin word *congero;* and Boerhave, says Dr. Parr, employed it to denote the accumulation of blood in a part, produced by lentor, or spissitude of that fluid. By Dr. Cullen it is used to express the fact of increased action, or inflammation of a part. Dr. Armstrong, the most enlightened advocate of the doctrine of Congestion, and who may be considered as the master spirit that has moulded it into some form, and given to it the strong attractions of a fascinating theory, employs the term, evidently, in a signification rather mechanical. It requires no very comprehensive retrospec-

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tion over the path of medical history, to enable us to see the injurious effects which have resulted from the introduction of terms borrowed from mechanics, hydraulics, or chemistry, to explain the actions of the living animal economy, whether in a healthy or morbid condition. Figurative language, when employed to embellish moral subjects, is understood, agreeably to the nature of the subject of such embellishment. But when a term, used in one department of natural science, is transferred to another, confusion and misconception are apt to be engendered; and the idea *originally* communicated by such a term, is constantly associated in the mind with its transferred employment. Thus, not to multiply a great variety of instances, the word Congestion, which is a mechanical phrase, expressing equality of an inert mass, is used by many medical writers, to denote a mechanical accumulation of blood in a part of the living system. The physiological laws of the economy are lost sight of, and merged in the unvarying and immutable condition of a phenomenon, which, properly regarded, is but an effect.

Accuracy and precision in scientific terminology subserve three important ends. First, a copious and definite techniology is an instrument of intellectual analysis. Secondly, we discriminate with greater perspicuity the objects of research, when we have a distinctness of view kept up in the mind by a determinate language, designating such objects. Thirdly, to impart our thoughts to others, the utility of a nomenclature, replete with a diversity of meaning, and yet accurate in the import of each word, is universally recognized. But when a word, such as Congestion, is employed in both a generic and specific sense, without proper regard to the pathological state of the system, or part, under deranged action, error must inevitably spring up from this source, and the judgment of the practitioner be misled in its decisions on the momentous concern of a fellow being's life. That I may not transgress against the spirit of truth, by which our minds alone should be guided, I will copy from Dr. Armstrong his own views on the subject, to show the reader the discrepancy and confusion which existed in that eminent physician's mind, on the patho-

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logical state of the whole, or a part of the system, called by him Congestion. I will in the next place endeavour to point out the danger of mistaking four pathological states of the whole, or part, of the system for Congestion—viz:

1st. Sympathetic derangement.

2d. Constitutional irritation, or shock.

3d. Suffocated excitement.

4th. Collapse of the vital powers in the last stages of fever.

And the discussion will be closed by some general and practical reflections.

The following quotations from Dr. Armstrong, go to prove that some degree of confusion existed in his mind on the pathological doctrine of Congestion.

"In congestive cases, the local accumulations of blood in the veins obstruct from the beginning, the common series of febrile phenomena, and there is in consequence either a total want of morbid heat, or a concentration of it in some particular parts of the body, whilst others are considerably beneath the natural temperature. It is the entire absence, or partial presence of excitement, which constitutes the chief external distinction between the severest forms of the congestive typhus; as they all coincide in oppressing the functions, or in deranging the structure of some important organ, by an *almost stagnant accumulation of blood in some part of the venous system.*"*

Attacks of the worst cases of congestive typhus, says Dr. A., are sudden, and marked by "an overpowering lassitude; feebleness of the lower limbs; deep pain, giddiness, or sense of weight in the encephalon; a dingy pallidness of the face; anxious breathing; damp relaxed, or dry withered skin; and those peculiar conditions of the temperature which have been noticed above. The pulse is low, struggling, and variable; the stomach irritable; frequently there is an inability from the first, to hold up the head; and the mind is more affected with dulness, apprehension, or confusion, than with delirium. The whole appearance of the sick impresses the attentive practi-

* Practical Illustrations of Typhus Fever, p. 73.

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tioner with the idea, *that the system in general, and the brain in particular, are oppressed by some extraordinary load.*"

The reader would infer from reading the above extracts, that the eminent author had very definite and accurate conceptions with regard to the symptomatology and pathology of Congestion. That in the author's own words, it was clear, "arterial excitement was an excess, venous congestion a deficiency, of natural action," and that there was a morbid arrestation of blood in the veins, giving rise to a preternatural accumulation, amounting almost to an entire stagnation of the vital current. And yet, Dr. A. in his obervations on Pulmonary Consumption, says, "It necessarily follows that when the energy of the heart and arteries is much diminished, that they cannot maintain the natural current of arterial blood, and of course a proportionate accumulation takes place in the veins; *and this venous accumulation appears to load and stimulate the capillaries of the arterial system, by retarding the return of the blood through them.*"—p. 159.

Now in accordance with Dr. A's own views of increased action, or inflammation, Congestion is inflammation itself, as we read at page 288, of his work on Typus, under the head of Common continued Fever. "The action of one artery, says he, I have never known greater than that of another, and *what we call increased action is, I suspect, merely increased accumulation, and what we call increased determination is, I also suspect, merely an increased volume of the vessels arising from an impediment to the return of the blood from the quarter to which those vessels lead.*"

From the above quotations, it is very obvious, that he had no distinctly marked line of difference in his own mind, between inflammation and Congestion, but that agreeably to his own words, the pathological condition of the parts was identical. Dr. Potter, his distinguished American annotator, concedes all that we could desire on this point. In a note at page 67, he says, "The observant author has accurately depicted the phenomena of the congestive state, but there is great difficulty in explaining, on the known principles of pathology, how venous congestion can occasion such deplorable conse-

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quences, without the instrumentality of arterial action. Although the first impression of the action of the heart may be transient, it is often violent, often distends the distant smaller ramifications of the arteries, and sometimes ruptures them. In a subject that was examined by the knife at my request, one that had been well characterized by all the prominent symptoms of venous congestion, as they are described in the text, the arteries of one of the kidneys, a part of the peritoneum, and a considerable portion of the intestines were evidently inflamed, while the extraordinary distention of the veins was remarkably perspicuous."

The illustrious Gregory has said with truth, *Medicina enim neque agit in cadaver, neque repugnante natura aliquid proficit*, that medicine will neither act on a dead body, destitute of vital property, nor will it act *contrary* to the *laws* of organized animal existence. Now what is true, as it respects therapeutics, is equally true in reference to pathology. There can be no pathological state of a part, or the whole body, generated by a process exactly similar to the method in which mechanical, or chemical results are obtained. This is the rock on which Dr. Armstrong's frail theory is wrecked. Here is the fallacy on which he built his hypothesis. If we for a moment contemplate the moving powers of the circulation, and keep incessantly before the mind the laws which govern the animal economy, the irresistable conclusion will fasten upon our judgment, that the theory of venous congestion independent of arterial impulsion, is altogether vague and ambiguous. The heart is the great central impellent organ of the blood in the entire march of the circulation. An uninterrupted continuous column of blood fills the pulmonary, as well as the systematic, arterial, and venous tubes. The pulse which we feel, when our fingers are laid on the radial artery, is not occasioned by any dilatation of the calibre of the artery, but the stroke, or impulse which the column of blood receives from the heart, resists the pressure thus made, and in this pulsation the arterial tube is passive. We consider it very doubtful whether the capillary system has any power of independent circulation. But this physiological question, re-

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plete as it is with curious and interesting matter, I must pass over. The venous system has no endowment of function which would enable it to act without a previous exertion of power by the heart.

Although the automatic diastole of the auricles, assisted by the pressure of the circumambient atmosphere, muscular contraction, and the elasticity of the veins, may all concur in assisting the circulation of the blood in the veins, yet the power of the heart is the main cause of the progression of the vital fluid through the entire tract of both the arterial and venous systems. Admitting these facts, which the late physiologist in England and on the continent of Europe have irrefragably established, we see at once the fallacy connected with the theory advanced by Dr. Armstrong, and so generally adopted by physicians. Suppose the action of the heart is weakened, what results? Not an accumulation of blood in the venous tubes, as Dr. A. asserts, but the column of blood which pervades alike, both the arteries and veins, is not so forcibly impelled towards the extremities. The diminution of action must alike pervade the arteries and veins.

The power of the heart is altogether a vital power: but the process by which it accomplishes the final results, the ultimate end, that is, the circulation of the blood, is brought about by the agency of a mechanical arrangement in the vessels. Now, let us take two sets of tubes, imitating the arteries and veins, made of some elastic matter, and at the centre of the entire circle, place a piston. It is manifest that when the piston is forcibly impelled against the column of fluid which fills them, an impulse must be conveyed throughout the whole circle. That there are certain vital properties with which the capillary system of vessels is endowed, is proved from the known fact, that all the secretions are performed by that system. Instead of saying with John Hunter, that the blood contains the principle of animation, we might safely lodge it in the capillary vessels. But these have enough to employ them when engaged in the important vital processes of secretion, in all its diversified results, without taking

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any part in aiding the heart, to propel the blood onwards through them.

The appearances seen in an examination of the dead body, are adduced by Dr. A. as corroborative of his views of venous congestion. But it is a well known fact, that in a majority of cases, the blood is invariably found in the venous system, the elasticity of the arteries forcing it into the veins, and the lungs ceasing to expand, the blood accumulates in the pulmonary artery, and consequently, a reflux of its current arrests that fluid in the right auricle. When an animal dies suddenly, the functions of the brain and heart being destroyed, without the intervention of the lungs, the venous system is not found so loaded with blood.

The brain, liver, and intestines, are the organs most liable to the state, called venous congestion. The structural economy of the brain, as respects the circulation of blood through it, is well adapted to prevent the evils of venous congestion. In cases of violent muscular effort, when respiration is suspended, as in parturition, and every vessel about the head seems full, almost to disruption, no injury results. The sinuses of the brain may be distended with blood, and yet, from their position, no pressure is induced on the cerebral mass. The pia mater, tunica arachnoides, or substance of the brain itself may be the seat of acute or chronic inflammation. M. Martinet, in his Pathology, says, "permanent congestions of the pia mater, encephalitis, and ataxic or nervous fever, may be mistaken for arachnitis of the convexity of the brain; dropsy of the ventricles, 'ramollissement,' or softening of the hemispheres, of the corpus callosum or cerrebellum, and adynamic or putrid fever, may be mistaken for that of the base, and finally, hydrocephalus, and several chronic alterations of the brain, may be mistaken for chronic arachnitis."—p. 127.

The symptoms indicating what part of the encephalon, or its investments, are inflamed, seem very equivocal, and are not to be confided in, as of much moment. The treatment in all such cases is similar. From its being the general receptacle of all sensitive impressions, as well as the point of conveyance for the various irritations of automatic life, the

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brain is often functionally deranged, as will be shown. The liver is considered by some medical gentlemen as a sort of *officina morborum*, the fountain head of all diseases. Dr. J. Johnson, in his Tropical Climates, has strenuously insisted, that congestion of the liver is the proximate cause of dysentary and bilious fever, the remote cause being the injurious agency of a mutable temperature on the skin, propagating a morbid action to the portal circle, through the cutaneo-hepatic sympathy. But yielding to Dr. J. the specious physiological law of a cutaneo-hepatic sympathy, as exercising a dominant control over the liver, yet how can we account for the subsequent symptoms of either dysentery, or bilious fever, upon such grounds of explanation.

From the structural arrangements of the liver, we perceive it subserving a two fold office. It is a secretory organ, exerting a very extensive influence over all the functions of the other abdominal viscera. And as a transmitting organ, through which the black abdominal blood finds its way to the heart, its importance in the economy is enhanced. Broussais, in his Physiology, has demonstrated that the portal circle acts as a diverticulum, or reservoir, for the blood when the action of the heart is much hurried, or a retrocession of blood takes place from the general surface of the body. The venous blood is arrested, before it reaches the heart, in the vena portæ, and thus the heart is not suddenly overwhelmed by too great a supply. This eminent physiologist, contends "that the vena portæ is always engorged in those who die of gastro-enteritis. Though it is evident, the effect has been received as the cause, since it is irritation of the intestinal mucous surface that accumulates blood in the veins of the abdomen."—p. 388.

I cannot impart more information to the reader, who has any doubts on this point, than by copying from Mr. Shaw's Manuel of Anatomy, the result of his very extensive observations. "It is a very common mistake to describe the loaded state of the vessels as an appearance denoting inflammation; the state of the true inflamed intestine is so distinct, that it can hardly be forgotten after it has been once seen. In the

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first stage there are numerous small vessels seen, upon the gut, like those on the eye in opthalmia, with a suffusion around them; in the second stage there is matter, or lymph, effused; and in the more advanced state, adhesions are formed between the surfaces of all the intestines."—p. 65.

"In the greater number of those who die of fever, the intestines appear gorged with blood not inflamed; but on opening the lower part of the small intestines, we shall generally discover small ulcers, with thickened edges; this appearance is almost always found in the great intestines of those who have died of dysentery."—p. 67.

The limited space allotted by me, forbids an indulgence of annotation on the above remarks of Broussais and Shaw—let the reader reflect on them, and deduce his own conclusions.

My next object will be to point out those affections which wear the guise of venous congestion,—agreeably to Dr. Armstrong's doctrine on that subject. The first class of cases, which simulate the symptoms of venous congestion, according to the order of the arrangement adopted, comprises all of those affections which are produced by sympathetic irritation. As a few apposite facts are of more value in settling controversial points, than a multitude of reasons, however ingenious, I will notice several veritable instances of the agency of morbid sympathy, in occasioning symptoms of a threatening character to life.

I was called, in the autumn of 1822, to see a boy in convulsions. He was of a spare habit, about eight years old, and of rather a feeble constitution. He was laboring, as I then thought, under congestion of the brain. His skin was rather cold, pulse quick and tense, and bowels costive. I took from his arm about a pint of blood, but there was little abatement of the convulsions. A blister was applied behind the neck, and ten grains of calomel given as soon as he was able to swallow.

The case seemed hopeless, and I left the house under a firm conviction that venous congestion in the brain was doing its work of death, in defiance of my applications. The fits did not abate till the calomel operated, which it did in three or four hours, being assisted by stimulating enemata. When it

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operated, a large handful of ascarides were evacuated, upon which the convulsions left him entirely.

Whilst a student in the year 1815, I was sent to see a child with all the symptoms of hydrocephalus—strabismus was present. This child was cured by one dose of calomel, which brought away a considerable number of lumbricoides. Cases analagous might be multiplied, but as the above are not as directly applicable to our subject as the reader may demand, I will give two others from my own observation, and one from Dr. Marshall Hall's work on Mimoses.

In the summer of 1819, I was called to see Mrs. F. in a state of coma, with reduced arterial action, coldness of surface, and constipated bowels. As I had never seen her before whilst thus attacked, though I understood she was subject to similar seizures, my mind was much embarrassed concerning the nature of the malady. But after much inquiry of her friends, and a careful inspection of the case, I concluded it to be a nervous affection, resulting from a sympathetic irritation of her stomach and bowels. I ordered injections of a strong solution of common salt and water, which operated and produced some reaction of the heart. As soon as practicable, she took a gentle emetic, which excited a pretty copious vomiting of mucus—after the action of the emetic, her muscular system became much irritated, and decided symptoms of hysteria were manifested. Sulphuric æther and laudanum were given to calm the excessive irritability of the system, and the convulsions, and other hysterical symptoms soon left her.

Here the irritation was lodged in the stomach and bowels; perhaps both had suddenly fallen into a state of atony and inaction, which gave rise to symptoms like those of venous congestion.

The following case is one of the most interesting of the kind I ever saw. Mr. H. sent for me in July, 1827, and the young gentleman who came, informed me that the attending physician was out of town, and that such was the unexpected change for the worse in Mr. H's case, that he required my immediate attendance. I immediately waited on him, and found him with cold extremities, clammy skin, feeble pulse,

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and great restlessness. Very soon, a sensorial disturbance supervened, and he became slightly comatose, which in the course of the night augmented into a complete suspension of all consciousness.

All these phenomena were induced by drinking ice water, whilst convalescing from an attack of dysentery. At first he vomited some dark colored, flocculent, mucous fluid, but after giving him a dose of laudanum and aq. amm. pur. the irritability of stomach subsided.

Dr. Ferguson, his physician, a gentleman of known skill in his profession, and myself remained with him till twelve that night. When we left him, he was still sunk in a profound state of insensibility, his pulse scarce perceptible, his skin cold and bathed in a profuse clammy sweat. Sinapisms were applied to his ankles, and the laudanum and aq. amm. pur. with wine whey, were continued through the night. We left him under a full persuasion that he was moribund. But next morning, the appearances were more auspicious, yet there was no return of consciousness. The course of stimulation was persevered in through this day, and the next night, and on the third day, there was a manifest amelioration of all the symptoms—in a week he started home in a steam boat, but died on the voyage, of dysentery, after being detained on board five days longer than he expected, from an accident happening the engine.

Here we see a series of morbid movements excited in the action of the heart, in the functional powers of the brain, and in the skin, from the excessive irritation of cold water on a weak and irritable stomach.

It is a familiar fact, that when a man drinks a quantity of cold water after exhaustion from muscular exertion in a hot day, his mind soon becomes deranged, and he sinks rapidly under the prostrating agency of the injury, unless ready aid is afforded. Here the excessive irritation acts on the nervous system through that organ, which Mr. Hunter has said is "the seat of simple animal life, and thereby the organ of universal sympathy of the materia vitæ, or the living principle."*

* Hunter on the Blood.—p. 361.

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Dr. Marshall Hall, in his valuable little work on the Mimoses, says, the Mimoses Decolor, with affection of the head, is, in many instances, mistaken for sudden tendencies or congestions of blood with regard to the brain, and for insiduous or chronic inflammation of this organ.

"*Case* LXXI.—Mrs. C. of B. aged 45. She is affected with the mimoses decolor, &c. This lady has for many years been subject to attacks of *violent pain of the head*, accompanied with a sense of constriction about the neck, for which *bleeding*, *blisters*, and a *seton*, have been variously recommended by various practitioners. The affection continued to recur, notwithstanding, for very many years, always inducing the fear of some attack of an apoplectic nature. It has yielded however, to a *persevering* use of efficient purgative medicines." In another case, the patient was treated first for an affection of the brain, and then of the liver, "by bleeding, leeches, and blisters, to an almost incredible extent."—p. 153. The skin in the above cases was of a dingy aspect, and there was much prostration.

I have seen a man operated on for fistula in perinæo, in whom rapid appearances of venous congestion arose, when the urethra was cut. Irritation of the urethra from the introduction of the bougie, at times, brings on an attack of shivering, with other symptoms belonging to Dr. Armstrong's congestion.

I trust that I have made apparent to the reader's mind, the important clinical fact, that a simple irritation of a viscus, or other sensitive portion of the body, may by a sympathetic extension of such irritation through the general system, induce those phenomena, which are laid down as characteristic of congestion of blood in the veins. It is not contended that all the symptoms enumerated by Dr. A. are present in such cases. Neither are they always presented in high relief in those instances, in which Dr. A. would contend for the existence of that pathological state, which I am now controverting.

The second class of simulated venous congestion cases, is composed of the varieties of *constitutional irritation*, or *shock*.

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Such is the copiousness of this part of my subject that great compression of thought is demanded, to keep within the bounds of a desirable brevity. I cannot here, perhaps, act more judiciously than in giving a valuable extract from Mr. Travers's master-piece of medical surgery, his "Inquiry concerning that disturbed state of the vital functions usually denominated Constitutional Irritation."

"A patient in a case of fatal burn, after the first expressions of anguish have subsided, nearly resembles a person stunned by a fall, or as much stupified with liquor, without suffering an actual suspension of his senses. Inspection demonstrates fulness of the veins of the brain, and its membranes, and effusion beneath the arachnoid membrane, confirming the symptoms which occur in the latter stage. But these appearances are too slight, and too frequently seen in the bodies of persons who die rapidly, to be much dwelt upon. The proximate cause of death appears to me to be a species of concussion, functional, not organic, by which the brain is deprived of its influence over the organ of circulation; for the symptoms of cerebral disorder are first manifested; secondly, a diminution of the power of the heart; thirdly, the respiratory function becomes impeded, as a necessary consequence of the two first."—p. 80.

The following case came under my observation in the fall of 1821,—it is a good exemplification of constitutional irritation from loss of blood. The symptoms so nearly resembled those laid down by Dr. Armstrong, as characteristic of venous congestion, that had I at the time not known the *cause* which produced them, my mind would not have paused a moment in arriving at the conclusion that great accumulations of blood in the veins of the vital organs, especially the brain, almost to a "stagnant plenitude," as Dr. A. would say, existed, and were the real *fons et origo* of all the morbid phenomena.

A poor woman, in the seventh month of her pregnancy was attacked with uterine hæmorrhage. Supposing it to be the result of too much labour, I ordered her to be quiet in bed, and gave her an opiate. It returned in twelve hours after the first eruption, with fearful violence.

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My friend, Dr. J. C. Johnston, a gentleman of accomplished attainments in his profession, was sent for to assist in the delivery, which I now saw to be essential to the preservation of her life. We proceeded to the task. The placenta was found attached over, or around the mouth of the uterus—the blood was pouring forth in one unabated current; the pulse began to flag; the woman became delirious; her extremities were getting cold, and the general surface assuming a shrunken aspect that betokened the rapid exhaustion of the system. In this state her mind wandered to a great degree, and it was with some difficulty that we could induce her to submit to the delivery of the child by turning.

After a persevering and toiling effort of several hours, we accomplished the work by gradually dilating the os tincæ, working the hand up between the placenta and uterus, breaking the membranes, and bringing down the feet. The explicit directions given by that eminent teacher of Midwifery, Dr. Dewees, we found of invaluable benefit in guiding us to a correct treatment of the case.

The patient was now entirely pulseless, and there was little prospect of saving her life. But we gave her a dose of laudanum, with brandy toddy, to calm the constitutional irritation, and left directions to continue the stimulant plan through the night.

Reaction took place in the morning, it being midnight when we left her. Still the head was affected; there was some confusion of mind, and much throbbing in the arteries of the head. Quietude was enjoined, and cold applications to the head were used. Towards evening a purge was given, and the cold applications continued. In a week she was convalescing, and had a slow recovery.

The following case is from Mr. Travers's work. "A man fell from the roof of a coach, and in the fall suffered a compound fracture of the leg. He was replaced on the coach, and brought to London, a distance of forty miles. On his arrival at the Hospital, he appeared as if intoxicated, but recovered from this state in a few hours. On the third day, without any considerable previous inflammation, the leg began to

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assume a gangrenous appearance. On the fourth day he became insensible: his breathing stertorous, and the pupils of his eyes dilated. The symptoms so much resembled apoplexy, that it was supposed some effusion of blood had actually taken place in the brain. The same night he died, *and on examination, no morbid appearances whatever was found in the brain or other viscera.*"—p. 82.

In a paper which I published in the 1st No. of the Transylvania Journal of Medicine, on Cholera Infantum, I have attempted to show, that when children die with symptoms of hydrocephalus internus, after a violent seizure of cholera, the symptoms, imitative of the cerebral affection are only functional disturbances of the brain, produced by the shock imparted to the nervous system, from the violent intestinal malady.

Mr. Hunter says he has seen tetanus from loss of blood. Any agent which makes a sudden breach upon the functional integrity of the nervous system, will occasion the symptoms of constitutional irritation. Sudden and great losses of blood in irritable constitutions, especially in children and women; injury done a limb; surgical operations; protracted cold to the surface, where the powers of resistance are weak; febrile excitement; mental emotions, &c.

I have repeatedly seen men die of fever, when there were evident manifestations of cerebral affection, such as dilated pupils, delirium, subsultus tendinum, optical illusions, and even convulsions, and yet upon examination of the brain after death, no organic læsion whatever was seen.

The third pathological state with which venous congestion may be confounded, is *suffocated excitement.*

Dr. Rush introduced this term, and intended to import by it the fact of a high degree of inflammatory action, creating a partial suspension of the functions of life, from its intense and overmastering influence of the system.

Sydenham pointed out the important practical truth, that the petechiæ and vibices sometimes seen in fever, do not proceed from debility giving rise to a mechanical exudation of blood under the skin, but are the evidences of "nature's being

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in a manner oppressed and overcome, so as not to be able to raise regular symptoms, adequate to the violence of the fever; all the appearances being quite irregular."

Dr. Rush, whose glory lives in the imperishable monuments of genius, which his own hands erected on the field of American Medicine, acknowledges his obligations to the English Hippocrates for his views on this point. It was the defect of our illustrious countryman's pathology, that it was too exclusively confined to the blood vessels.

Dr. Parry, of Bath, in his able work on Pathology, &c. has followed Dr. Rush, with some enlargement, and a more precise enunciation of seminal principles, but his pathological doctrines are amenable to the same objection. It appears that Dr. Makittrick, in 1772, published his Commentaries on the Principles and Practice of Physic in Bath, and promulgated the same leading views which the elder Parry, in 1815, gave to the world.* It is the more necessary to warn the reader against an unqualified reception of the pathological systems of Rush and Parry, because they are so popular, from their simplicity and comprehensiveness.

Every practitioner of medicine should be like the judicious Boerhave—I mean judicious in this respect—eclectic; carefully sifting and analyzing every opinion, and giving a due appreciation to every well recorded fact. The man that bows his understanding to any popular opinion, regardless of its harmonious adjustment to the order of natural phenomena, may become skilled in *adopted* reasoning, but will never have a judgment well balanced, nor a memory well stored with facts.

With these introductory remarks to the third head of my subject, I will now give two cases, reserving practical inferences, agreeably to my plan, for the concluding remarks of the general discussion.

A poor woman sent for me in 1822, during the prevalence of a desolating epidemic bilious fever; not being able to go, I sent her a dose of calomel and jalap. Next day, understanding that she was worse, I visited her. Upon my

* Western Medical and Physical Journal, Nos. I. and IV.

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arrival at the house, I understood that she had been delirious all night, and had attempted to get out of the window. This was the third day of her fever—her skin was cold and clammy, her pulse soft and compressible, with very little force in the stroke of the heart; her tongue was brown; and on her arms and breast were petechiæl spots. She had vomited some dark coloured fluid, and her bowels were constipated. Death was evidently approaching rapidly. I attempted to draw some blood, but the vein soon collapsed, after a very little was detracted. Warm drinks, with sinapisms, were ordered, but she died in a few hours.

No inspection was made by the knife, but it is evident that the stomach was the suffering organ. Could mere venous congestion of that viscus so soon destroy life? The answer may be yes, if by venous congestion you mean that phenomenon which the veins present in inflammation of a part—that is, increased fulness, and augmented volume.

In the winter of 1828, I was invited to see the post-mortem examination of a negro man, who had died about eight or ten hours before we arrived at the house. His physician gave the following summary of his attack, and the treatment pursued.

On Friday he was employed in getting some lumber out of the Ohio, which had inundated its banks, and threatened to carry off every thing near its shores. He drank a good deal of whiskey, was very wet all day, as he had to wade in the water for the plank, &c., and worked hard till late in the evening. That night he was taken with a chill, when the physician was sent for. He immediately gave him calomel. Next morning the skin was still cold, and pulse feeble. He was purged. This day, or the next, a small quantity of blood was drawn. The treatment pursued afterwards was calomel, opium, and camphor, in large quantities. The patient evacuated blood for two days before death. In one week the case terminated in death, previous to which event there was stupor for two days.

There were five physicians at the examination. Three of them were veterans in the warfare with disease, two were gen-

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tlemen who had practiced nine or ten years. Two of the elder gentlemen pronounced the case to be a genuine example of venous congestion. The others thought that inflammation would be found in the bowels. The brain was examined, there was no appearance of inflammation about it, or its meninges, but the two *congestion* physicians thought they discovered venous congestion on its surface, as there was evidently dark coloured, (not quite black) blood found in the sinuses of the encephalon. The three *inflammation* gentlemen saw no congestion about the organ.

The thorax being opened, all the viscera in that cavity seemed in good keeping; but there was some darkness of aspect about the portion of the lungs that lay towards the spine. Here was fresh matter for a contrariety of opinion. Congestion, and gravitation of blood, were the two different conclusions. A portion of the lung thus filled with blood, was taken out, and put in water—it seemed as sound and light, after repeated trials, as any other less coloured part.

The abdomen was then inspected. The liver appeared sound in its aspect and size, but along its outer edge it seemed of a darker hue than the other portions. Here congestion was again seen by two of the gentlemen, but denied to exist by the three others.

Then came the stomach, which, internally and externally, was free from disease. The small intestines were found, to the extent of two feet, inflamed on their mucous surface—the blood was exhaled from the mucous tissue, and coated it completely. This state of the intestinal tube was called venous congestion by two of the gentlemen, the other three argued that phlogosis evidently existed; that the mere loss of blood from the bowels was not sufficient to destroy the patient; but that the injury done by a highly acute state of inflammation, in a part so important, had terminated life. Every other part of the intestines was sound. For reasons the reader can easily appreciate, I avoid any disclosure of names. We cultivate a profession in which all the generous feelings of our nature should have exercise, and to avoid all

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unnecessary occasions of inflicting a wound on the most susceptible sensibility is our bounden duty.

The fourth pathological state with which venous congestion may be confounded, is that condition of the system, denominated *collapse.*

After the excitement of bilious fever has continued several days, or weeks, according as the powers of resistance may be in the patient, the action of the heart becomes enfeebled, the pulse, instead of being tense and quick, or full and slow, gradually sinks down into a soft, compressible, and more rapid stroke; the skin loses its fervent temperature, and assumes a more natural heat, or becomes cold and clammy; the tongue is dry and brown; the alvine discharges are watery and frequent, or they are dark coloured and small; the eyes become blood-shot, or weak and watery; the patient lies on his back, with his knees drawn up; there is some subsultus of the fore arms, felt when you grasp the wrist, though slight at first; the eyes are rolled up, as if the patient were asleep, but the lids do not cover them, so that you see their white part; and when asked how he is, he answers, "pretty well," though his mind, unless roused by your interrogation, seems incoherent, or comatose.

Now, a physician, whose head was surcharged with the doctrine of venous congestion, would fasten on these symptoms as indicative of that state of the vessels. But if he attempted to treat the patient on this principle, the plan of cure would prove a quick acceleration of his death.

I speak from a personal trial of the therapeutic procedure, which is built on the false foundation of venous congestion in the typhoid state of fever. This collapse of the system may exist without any organic lesion whatever, and most generally is unaccompanied by structural alterations. For if inflammation existed in any important organ, the case would terminate more speedily, and the recoveries would not be so common as they are under a proper treatment. Besides, were there inflammation, the symptoms would indicate it in a less equivocal manner.

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The nervous system is to be adverted to, as affording a clue to guide our steps through the intricate perplexities of such cases. Mere loss of balance in the distribution of the blood does not satisfactorily obviate the difficulty. Effects should not be substituted for causes, nor should one symptom be allowed to fill the entire field of our intellectual vision. The symptoms point to some *functional* derangement of the nervous system, connected with an arrest of certain important secretions, such as those of the skin, liver, and kidneys. And the inspection of the dead body confirms this view. The following case is in point; it is selected from several others of a similar character.

A man, of about twenty years of age, addicted to drinking whiskey, of a thick well set frame, and of full habit, was brought into the Louisville Hospital, from the Louisville and Portland Canal, affected with measles. He was bled and purged liberally, and had been treated properly in every respect by Dr. Hall. In two weeks from his admission he died; before which, he had low delirium, and other symptoms of a collapsed state of the system. *Sectio cadaveris*, two hours after death. Not a single trace of disease could be discovered either in the brain, or viscera of the thorax and abdomen. A more natural exhibition of the organs I have never seen.

It is, perhaps, worse than useless, to speculate on such cases, the reader must exercise his own powers of ratiocination, or it is in vain that the above facts are spread before him.

A few practical reflections and inferences will close this paper.

The central point at which all the rays of our information on medical subjects should meet, is the acquisition of a sound, discriminating, practical judgment. A judgment which will enable us to stand prepared and ready for decisive measures in the critical hour of a fellow being's sufferings and peril. To assist in the formation of this clinical discernment, I would ask my reader, whether he does not see that there is in pathology, no such a state of the system as venous congestion.

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In the next place, is there not room for careful perquisition into every case, however at first sight similar, afforded in the views given above. 1st, on simple irritation, inducing sympathetic affections. 2d, Constitutional shock, putting on a semblance of venous congestion, as described by Dr. A. 3d, Suffocated excitement, which is the real pathology of the cases detailed by Dr. A. and 4th, Collapse of the system, after the vires vitales have been prostrated by continued febrile orgasm.

I have tried to avoid excessive refinement in the views presented. Subtle and wire drawn distinctions may amuse in the closet, but they avail nothing at the *bed side.* There the mind must, with comprehensive discernment, see the case in its predominant and ruling features. To ascertain the real nature of the case under inquisition, we must attend to its history; the mode of seizure; the habits of the patient's life; the constitutional tendencies of the individual, whether he, or she, is of an irritable nervous temperament; or sanguineous and liable to inflammatory affections; and whether there has been any medical treatment previously pursued.

The treatment of sympathetic derangement should be guided and directed by a knowledge of the cause giving origin to such aberration from health. It will be found that in a majority of such cases the intestinal canal is the seat of the morbid irritation. Purgatives, especially mercurial, in such instances are the best means of administering relief.

The fond reveries of a system monger may exclude effective cathartic remedies from our therapeutics, but a well disciplined practical judgment holds on its way, unmoved from its decisions by such false lights.

The uterus in women, sometimes, gives rise to sympathetic affections, of a hysterical kind, these are to be treated by purgation, which creating an impression on a different quarter, diverts irritation from the womb. Hysteria, most frequently, originates from the stomach and bowels, and therefore catharsis is more demanded.

Dr. Marshall Hall's work on Mimoses, is a further confirmation of Hamilton's practice, and powerfully illustrates the

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sympathies that bind the stomach and bowels to every part of the human body.

In cases of shock, or constitutional irritation, from concussion, or a severe accident, our duty is to wait for reaction, before we officiously begin to deplete. Surgeons well understand this important step in treating such cases, yet I have known even grey headed physicians open a man's vein, whilst lying on the spot where he received the injury, cold and nearly pulseless.

In all such cases the plan of treatment is to put the patient to bed; apply warm bricks to his extremities and under his arms; give warm teas if he can swallow; and wait the issue. In cases of burns, laudanum is generally prescribed, though Mr. Travers condemns it, and prefers giving a spoonful of brandy every hour or two, in two spoonsful of gruel. When reaction is restored, he withdraws the stimulus.

In suffocated excitement, where the actions are imprisoned under the strong urgency and excessive force of disease, we must watch every alteration with eagle-eyed regard. Bloodletting opportunely executed, is a valuable mean of developing action. But purgative medicines are a safer resource. Drs. Rush, Armstrong, and Johnson, have written on this practical point, what I will not attempt to re-write—to them the reader should go for a triumphant vindication of the depletory practice, and for a matter of fact refutation of the erroneous practice pursued by some physicians in analagous cases.

Dr. Potter, in a note to Armstrong on Typhus, admits that "the symptoms so formidable at the close of fevers are often nervous only, and the seeming congestions of as much importance as they are in hysteria."—p. 300. Accordant with this view, we should sustain the faltering efforts of life, by well adapted excitants, such as camphor, opium, vol. alkali, &c. Mercurial and antimonial preparations are to be used in very minute quantities, merely to promote the secretions. All purgative medicines must be avoided.

Wine, wine whey, panada, thin soups &c. are required, the feeble powers however, must not be goaded on to excessive

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action, but the sinking, quivering flame must be kept alive by a gradual supply of needful fuel.

Blisters, or sinapisms, to the extremities are useful, but we must not suffer them to remain on too long, otherwise much injury may be produced by the exhausting irritation which they excite.

I must stop—though the subject branches out the more my mind contemplates it, in its high bearings and diversified applications. To the reader I appeal for a candid scrutiny of the foregoing observations, and I confidently trust, that they may minister some aid to the inquiring mind in its search after truth, and contribute, in some degree, to the improvement of a profession, in which it is my daily occupation to be engaged, both as a necessary avocation, and as a source of elevated mental satisfaction.

Louisville, November 8, 1828.

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REVIEWS.

ART. II.—*A physiological memoir upon the Brain.* By M. MAJENDIE. *Read in a public sitting of the Royal Academy of Sciences, on the 16th of June,* 1828. From the French. By Joseph Gardener, M. D.

Some old writer has compared ANATOMY to GEOGRAPHY:—Geology would perhaps have afforded a better object of comparison, but Geology was then unknown as a science. The age of *geographical* discovery is gone by, and so it is, we opine, with the brilliant era of *anatomical* discovery. The spirit of man remains, however, the same; and we still see him as intent as ever, in the *search* after new organs in the living body, and new lands in the vast solitudes of the ocean. In both cases, at the present day, his utmost efforts must, generally, eventuate in disappointment, for the best possible reason—that the great world has been explored by preceding geographers, and the microcosm or little world of man, by preceding anatomists. In both, the *ratio* of success is a diminishing ratio; and must at last evanish altogether. Just in proportion, however, to the difficulty of finding any thing new, is the importance of a discovery enhanced, in the estimation of those who make it; and, what is of greater moment to be borne in mind, the credulity of professional discoverers exalted. Hence we should turn, not a deaf ear, but an ear of unbelief, or at least of doubt, to every rumour of new discovery, not backed by the testimony of a 'cloud of witnesses.' When all was *unexplored*, but little evidence could be required to secure our belief in the existence of all that was said to have been seen; but since nearly all *has been* explored, a philosophical incredulity, should be cherished in reference to every alledged discovery.

In most parts of the human body the search after novelties is given up, but the central portions of the nervous system,

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still present, or seem to present, some tracts of *terra incognita*, and to these has the adventurous spirit of anatomical research, of late, chiefly directed its movements. Of those who have obeyed, and are still obedient to this spirit, none are more distinguished for industry, boldness, and perseverence, than the ingenious physiologist whose latest memoir we are about to introduce to the notice of our readers. According to this report, he has discovered within the cranium and spinal column of the living animal, in a state of health, a fluid anatomical element, distinct from the blood, and scarcely less necessary than that liquid, to the manifestation of the phenomena of animal life. It exists, according to his declaration, not only in the ventricles, but also *around* the brain and spinal marrow and origins of all the nerves, passing with facility from the centre to the circumference, *et vice versa*. This liquid he denominates spino-cephalic, or cephalo-rachidian. Its quantity, in an adult of ordinary stature and in good health, is estimated at about three ounces; in women, *ceteris paribus*, something more. In old men the proportion is still greater, in some instances amounting to six or seven ounces; but under such circumstances the mental and corporeal energies are enfeebled. The layer which it forms around the brain and spinal marrow varies in thickness in different places, being in the neck four or five lines, in the lumbar region more than an inch, and around the brain from one to two lines.

Majendie asserts, that the volume of the brain is not invariably the same, as has generally been supposed, but that it varies like the volume of the other organs of the body. That when the body becomes emaciated, the brain undergoes a like diminution, and as the emaciated organs regain their former size, it also recovers what it lost. But no vacuum occurs in the cavity of the skull under any circumstances; hence, the first office of this liquid is to fill up the space produced by the diminished size of the brain, as often as that occurrence takes place. When the viscera of the thorax and abdomen diminish in volume, their parieties being flexible and pressed upon by the atmosphere, follow the retreat of those organs; and a vacuum is thus prevented. But the cranium being inflexible,

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does not follow the brain when it decreases; and hence the first use assigned for the cephalo-spinal liquid.

Its second office is to control the powers of life. Experiments were instituted upon animals, to test this point. A fierce fox was taken, and a small puncture was made in the nape of the neck, and the cephalo-spinal fluid was quickly evacuated; the animal became suddenly calm, and lay upon the ground without the least movement. After the expiration of 36 hours, it began to move, and attempted to bite and to make its escape. A new puncture was then made, and the cephalo-spinal liquid, which had been speedily reproduced, was allowed to escape; the animal then exhibited the same symptoms as in the former experiment.

In the disease of infants, where a sac filled with water occurs at the inferior extremity of the spine, Majendie thinks, this sac is a hernia, containing the cephalo-spinal liquid. When the sac is punctured, death is the immediate consequence; because the puncture remaining open, the liquid escapes, and ceases to protect the spinal marrow and brain.

Thus, says he, not only in man, but in animals, this liquid preserves the integrity of the nervous functions, and is necessary for the continuance of life. It is thought likewise, that it not only exercises an influence over the functions of the nervous system, by its contact with the brain and spinal marrow, but by its chemical properties, and its temperature.

It is the opinion of practical anatomists, that the cavities of the brain, or its ventricles, contain little or no serum in their healthy state. Nevertheless, when we open the brain, we find its ventricles almost always filled with a limpid fluid. Majendie thinks it is the same kind of fluid that is found at the surface of the brain and spinal marrow, and believes that it naturally exists in all these places. It was necessary for confirming the identity of these fluids, to discover a communication between the exterior of the organ and its internal cavities. This, Majendie says, he has accomplished, and that there exists an opening of 3 or 4 lines in diameter, completely concealed by a lobe of the cerebellum, and forming a true entrance into the ventricles. Hence it becomes mechanically

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necessary, that the cephalo-spinal liquid should enter into the cavities of the brain, and fill them, in consequence of their communicating with one another. From these circumstances, it is inferred, that the great valve of the brain, as it is called by anatomists, does in reality perform, to a certain extent, the office of a *valve*. The aqueduct of sylvius being overhung by the valve, and its size somewhat regulated by it, conveys this liquid from the 4th to the 3d ventricle, and the infundibulum conveys it to the pituitary gland.

The cephalo-spinal liquid is thought never to be in a state of repose, but continually agitated by the *flux* and *reflux* of the brain, which takes place from the influence of respiration. Thus, when air is received into the thorax, a portion of this liquid flows from the cerebral cavities into the spinal canal; and when it is driven from the lungs, the liquid re-enters these cavities, by traversing the passages above mentioned. This flux or reflux is probably owing, he thinks, to the alternate swelling and depression of the veins; the circulation of whose blood is under the influence of respiration.

The office assigned the pineal gland is that of a *tampon*, for the purpose of opening and closing the aqueduct of the brain. This gland is situated above the anterior opening of the aqueduct. Two voluminous veins are firmly placed upon the gland. These veins vary in size, being sometimes very much swelled, at others nearly empty. Hence, at the moment the veins are swelled, they must press down the pineal gland and close the opening of the aqueduct. And as one of the constant effects of violent exercise, rage, crying, &c. is to swell the veins of the head, it results, that the entrance of the cephalo-spinal liquid into the cavities of the brain is intercepted or modified, according to circumstances.

Lastly, Majendie proceeds to consider, what influence the cephalo-spinal liquid exercises over the intellectual faculties. To determine this point, it became necessary to ascertain the quantity of the cephalo-spinal liquid, 1st in the sane, 2d in the imbecile, 3d in idiots. Majendie had an ample opportuntiy of determining the quantity in the latter, at the *Salpetriere*, where are collected together a great number of fools and

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idiots. In idiots the liquid is found to occupy the surface of the brain and spinal marrow, under the form of a thick layer, and it also distends the ventricles, and displaces all the organs connected with them, especially the pineal gland. In these cases, the quantity amounted to 6 or 7 ounces, and the same circumstances obtain, in cases of old persons, who suffer from mental derangement.

In the insane and the imbecile from insanity, the liquid does not accumulate upon the surface of the brain, but in its cavities. In all cases of derangement, whether furious mania, or melancholia, the ventricles are always much distended. Persons endowed with reason have less than one ounce in the ventricles at the time of death.

From these general results the fact is inferred, that the development of the mind is in an inverse ratio to the quantity of the cephalo-spinal liquid.

By this discovery of an exterior cephalic fluid in the normal state of the body, our author conceives that the whole doctrine of *organology* is washed away, and of course the practical phrenologist is left without any foundation to stand upon. Such, briefly, are the principal contents of the memoir before us, a fuller notice of which seems unnecessary.

The intelligent reader will perceive that it sets forth two discoveries, 1st, a fluid surrounding the brain of the living and healthy animal, exterior to the arachnoid membrane; and 2dly, an aperture or channel through which this fluid circulates into and from the ventricles. Now we are not prepared to reject the reality of the latter discovery, as an aperture a few lines in diameter in a pulpy mass, like that of the brain, may have escaped previous observation; but that so many distinguished and prying anatomists as have dissected that organ, should not have recognized the existence of the exterior fluid in the healthy state, seems at least an improbability. If it should be said that at or after death this fluid retreats to the ventricles, some adequate cause ought certainly to be shown for such a movement; and until this is done, a belief in the assertion must be gratuitous. That Majendie has repeatedly found a serous fluid surrounding the brain, no one can doubt.

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Others, as we have already said, have met with the same thing. The question is, whether it is a component part of the body in health? For ourselves, we are compelled to say, that the facts contained in his memoir do not incline us to adopt the affirmative of this question. He has seen it most abundant in those whose cerebral functions were disordered in life. May it not then, in all cases, be the offspring of a morbid action in the encephalic membranes? If it were always present, how could it have escaped the notice of the surgeons who have so often witnessed lesions of the dura mater, in persons, who at the time of the accidents which befell them were in perfect health?

As to the objection which his discovery, supposing it to be real, presents to the very doubtful science of phrenology, we regard it as of no weight. If the fluid is spread over the surface of the whole brain, the relative development of its different parts or convolutions, might still be the same as if its surface came directly in contact with the dura mater. If the speculations in *organology*, therefore, laboured under no greater difficulties, than that which our author has started, they would rest on a firmer basis than that on which they seem to us to repose.

That the brain is liable to a degree of partial or general atrophy, is undoubtedly a fact; but this is the effect of disease, and the same morbid action in all probability gives rise to the serous accumulations, which our author attributes to a *vis conservatrix*, when he speaks of an increased secretion of the cephalo-rachidian fluid as designed to compensate for the absorption of the encephalic substance, and to preserve a cranial *plenum*. That the brain is subject to an increase and decrease of magnitude, whenever, from any cause, the body at large is brought to vary in its magnitude, is a position which practical anatomy does not sustain. The other organs derive a great part of their bulk from the cellular membrane which binds together the vessels and fibres which constitute their essential component parts; and the absorption of that membrane may go on till these organs suffer a great diminution of size; but in the brain, that tissue is not present; and what-

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ver absorption takes place, must be of the pulpy matter itself; and hence nature seems to have provided, that under ordinary causes of emaciation, the cerebral absorbents should not be called into action; in this consists the preservative principle of a cranial *plenum*, and not in the increased secretion of a spino-cephalic fluid.

Before closing this notice of the memoir of Majendie, we consider it due to his high standing, in the physiological community, to furnish our readers with an extract; and shall select those paragraphs which set forth his views of the influence of the spino-cephalic fluid upon our intellectual functions.

"The liquid which fills the cavities of the brain is never in repose—it experiences a continual agitation in consequence of a kind of flux and reflux, which takes place under the influence of respiration. Thus, at the moment when we draw the air into the thorax for the purpose of respiration, a proportion of the liquid flows from the cerebral cavities into the spinal canal—at the moment, on the contrary, when we drive the air from our lungs by expiration, the liquid re-enters these cavities by traversing the passages above mentioned, and particularly by running through the aqueduct, which thus at different times conducts the liquid in opposite directions.

The mechanical cause of the flux and reflux of the cephalo-spinal liquid is very simple—it is produced by the alternate swelling and depression of the veins, caused by the blood under the influence of respiration. This movement of the liquid may be arrested, or at least much retarded by compressing the abdomen—and this will explain the cause of belts proving injurious and even dangerous, whenever the pressure which they exercise is too considerable.

Whilst observing the movement of the liquid through the aqueduct, I believe I discovered the probable use of the pineal gland, a small body placed in the centre of the brain, and which has preserved a certain degree of celebrity since the time of Descartes.

This philosopher, who, notwithstanding the extent and vigour of his mind, yielding frequently to the propensity which we ourselves experience, in filling with our illusions the immense space which is beyond the boundary of vision and intellect, has given an hypothesis, not upon the throne of the soul, as has been remarked, but upon the situation in which it exercises its functions, and upon the throne of the imagination and of common sense, all of which he places in the pineal gland.

Voltaire, who delights in metaphysics, but loves still more to mock metaphysicians, has made a facetious parody upon the supposition of Descartes, which has been more successful than the hypothesis itself—for anatomists to the present day apply the term—reins of the

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soul to two nervous peduncles, which according to Voltaire, are the guides by which the pineal gland, which he compares to a coachman, directs the movements of the two hemispheres of the brain.

The functions of the pineal gland, which I propose to substitute for the hypothesis of Descartes, are very humble—but I believe them to be true, and that is a merit which, in science, ought to precede every thing. I regard the pineal gland as a tampon, for the purpose of opening and closing the aqueduct of the brain. The gland is, in fact, placed above the anterior opening of the aqueduct. Two voluminous veins are firmly placed upon the gland. These veins vary in size, being sometimes very much swelled, and at others nearly empty. It is inevitable, from the relative position of the parts that, at the moment when the veins are swelled, they must press down the pineal gland, and that this can not take place without closing more or less tightly the entrance of the aqueduct of the brain. But as one of the constant effects of violent exercise, crying, rage, and the exercise of any of the passions, is to swell considerably the veins of the head, and particularly those which press upon the pineal gland, it results, that in three different conditions, the entrance of the cephalo-spinal liquid into the ventricles must be intercepted, or at least rendered much more difficult.

The office, or to speak more correctly, one of the offices of the pineal gland, must be, therefore, an indispensable mechanical agent, for the purpose of more or less completely closing the aqueduct of the brain, and to modify, according to circumstances, the motion of the cephalo-spinal liquid, as it enters or flows from the cerebral cavities.

I come now to speak of the most important, and at the same time, the most interesting question which the study of the cephalo-spinal liquid can possibly present. What influence has this fluid upon the exercise of the intellectual faculties?

In a research, so delicate as this, and one, which presents a prospect of arriving at the most important and interesting results, the chances of committing error must be exceedingly numerous.

In order, therefore, to avoid error as much as possible, I have endeavoured to determine the extreme points, reserving to myself, if it should be desirable, the opportunity of noticing, at a subsequent period, the intermediate facts.

I will therefore state the quantity of the cephalo-spinal liquid, first, as it occurs in the sane; second, as it occurs in the imbecile; and, third, as it occurs in idiots.

The details of the researches which I have made at the Salpetriere, where there are a great number of fools, idiots, and sane women, I am sorry to say, are too numerous to find a place in this paper:—I must be satisfied, therefore, by mentioning the principal results.

In speaking of idiots, I have reference to those who have become so accidentally, not of idiots from birth, in whom there exists some mal-conformation of the nervous system.

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The idiots of whom I speak, present a considerable quantity of the fluid. It occupies the surface of the brain, under the form of a thick layer, and distends the cerebral cavities, displacing all the organs which they contain, and particularly the pineal gland, which neither retains its ordinary position, nor performs those functions which I have attributed to it. The aqueduct is also often considerably enlarged. It is in these cases that the cephalo-spinal liquid may be found to amount to *six* or seven ounces; and the same circumstance obtains in cases of old persons who suffer from mental derangement.

Fools likewise present a large quantity of the liquid; but it does not accumulate upon the surface of the brain. Whatever may be the variety of derangements, whether monomania, hallucination of the mind, furious mania, melancholia, &c., the ventricles are always much distended and enlarged by the cephalo-spinal liquid. In such cases, three ounces of the liquid have been found in the ventricles alone.

The brains of those endowed with reason contain, in a majority of cases, less than an ounce of liquid in their ventricles at the moment of death. From this circumstance it is easy to distinguish the brain of an idiot from that of a sane person.

I was once under the painful necessity of examining the brain of a man of genius who died at an advanced age, but who enjoyed the plenitude of his intellectual faculties. The entire quantity of the cephalo-spinal liquid contained in his brain and spinal canal was scarcely two ounces, and the cerebral cavities did not contain a drachm.

These general results seem to establish the fact, that the development of the mind is in inverse ratio to the quantity of the cephalo-spinal liquid, a circumstance which, to a certain extent, is easy of comprehension, since the quantity of the liquid can not be increased, but at the expense of the mass of the brain, and that in general, superior intelligence is observed in those who have voluminous and well formed brains.

Thus, those persons who have a large head, a high and expanded forehead, and who attach a certain degree of vanity to this conformation, should not be without inquietude respecting the relative proportion of their cephalo-spinal liquid.

I will add in this place, that this liquid should not be too abundant, and that its passage through the cavities of the brain and spine should be perfectly free and uninterrupted. I lately found in the brain of an aged singer, who, after having shone in our theatre, died an idiot in the Salpetriere, an obliteration of the opening by which the liquid entered into the ventricles; and as the brain of this female presented nothing else by which I could explain the disease of her mind, I was led to regard the obliteration of the opening into the ventricles as a cause, or one of the causes of her idiocy."

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In concluding, we feel constrained to say, that the paper of which we have stated the leading propositions, is not written in the philosophical spirit, which characterizes many of the preceding memoirs of the same physiologist. It is redundant in conclusions, but barren of facts. Of this he, himself, seems to be aware, and has intimated that want of time and space, had compelled him to withhold many of the *data* from which his deductions were formed. But these facts are precisely what he should have given; especially when he requires us to assent to the existence and active operation of an agent, which we had been accustomed to regard as the mere accidental offspring of disease. We cannot but think, that our author has presumed a little upon the authority of his eminent name, and flattered himself that his *ipse dixit* would be a substitute for facts. And it must be confessed that we are too often disposed to accept of this commutation. Nothing, however, is more unfavorable to the interests of true science; and no exhortation should be more frequently repeated, than that, which arouses us to vigilance in regard to the foundations on which men of genius and popular authority rest their opinions. The power of invention and discovery, is not always associated with a corresponding faculty of judging; and even when these capacities of the mind were, originally, well balanced, the former may at length preponderate. It is the more vivacious of the two; more ambitious; more growing; and may at length attract to itself a part of the supplies that should go to fortify the other. A vivid imagination may not only dazzle the judgment with which it is associated, but mislead the understandings of others; which in medicine is productive of consequences that all should seek to avert. The creations of fancy, presented to the profession as the deductions of a sound philosophical logic, and unconsciously received by the multitude, have done much to retard its healthy progress in every age; and as long as they continue to appear, it will be the duty of reason to distinguish them from the realities of phylosophical induction, and cast them out.

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ART. III.—*Account of the Dengue as it appeared in Charleston, S. C. during the Summer of* 1828. By S. HENRY DICKSON, M. D. *Prof. of the Institutes and Practice of Medicine, in the Medical College of S. C.*—Amer. Jour. of the Medical and Physical Sciences, for November, 1828.

On Dengue. By Dr. ISAAC HAYS.—Same Journal.

History of the Dengue, in New-Orleans. By Dr. PHILIP J. DUMARESQ.—Boston Med. and Surg. Journal, No. 32.

An account of the Dengue Fever, or late epidemic of the West Indies. By RICHARD TUTTE, M. D.—N. Y. Medical and Physical Journal, for September, 1828.

In our last number we inserted two notices of the new southern epidemic called Dengue. Since that time we have received several publications on the subject, the titles of which are prefixed to this article; and as we have just been called to treat three cases apparently of the same disease, and may, therefore, expect a visitation from it in this quarter, we hasten to lay before our readers the substance of the papers which we have just perused. We shall throw together our excerpts under a few distinct heads.

Symptoms. The following, according to Prof. Dickson, are the symptoms which this disease exhibited in Charleston:—

"In the numerous cases of Dengue a very great variety of symptoms were presented, numerous modifications being occasioned by age, constitution, and other circumstances of the sufferers. The attack was rarely preceded by a formed chill. In general the earliest indication of seizure consisted in a painful affection of some part of the body, some limb, joint, or muscle. The wrist, the ancle, the back, the knee, nay even the extremities of the toes and fingers were thus selected. In one case a single finger became stiff and swollen some time before any other symptoms were felt. I saw a child eat a hearty breakfast, after complaining of pain in his foot—his hand became stiff next, then his knees; the disease developing itself thus gradually during a space of at least five hours before there was any regular febrile exacerbation as denoted by change in the pulse, breathing, heat of the surface, &c. In a very old woman all the fingers were at once attacked—they were bent and could not be straightened—and the intensity of pain was such as to occasion tears with loud sobs and screams. In a stout young man this pain in the very ends of the fingers was such, that he cried bitterly. After these local pains had endured for a greater or less period, fever came on with its usual concomitants, headache, red eyes, full, abrupt, frequent pulse, hot, pungent, dry skin, pain in the back, restlessness, The

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Fever did not remit, but was usually of short continuance; from eighteen to forty-eight hours, the average perhaps being about thirty-six. There was sometimes nausea and vomiting, though in a very large majority of cases in the early stage of the disease, the stomach was quiet and the tongue clean. It was more usual to find excessive determination to the head. I met with several instances in which the delirium was among the first symptoms, coming on with the commencement, and going away at the subsidence of the febrile exacerbation. The skin I have said was hot and dry at first; it soon however, became relaxed, and an abundant perspiration was thrown out, attended occasionally by a sort of rash or military eruption. This eruption appearing in the first stage of Dengue, was very various and by no means regular or characteristic. Children were often thus affected by it, and in several adults a thick crop of pimples was the first token of disorder. These usually disappeared in a day or two. On the subsidence of the febrile excitement, the extreme suffering from the local affections above enumerated was somewhat diminished for the most part, but they did not by any means absolutely disappear, swelling, stiffness, and tenderness of the diseased parts remaining for many days. This state of things constituted a sort of deceptive interval between the first and second stages of this strange disease. In the mean while, many patients believed themselves well, and resumed their ordinary occupations, but their sufferings were by no means ended. On the third or fourth day, there being no fever present, or a very obscure degree of it, the tongue would begin to be coated with a yellowish fur, and the stomach would exhibit much uneasiness and distress. The patient was low-spirited, impatient, fretful, and at night exceedingly restless. Many, and myself among them, regarded this as the most oppressive and insufferable stage of the attack. There was now not uncommonly nausea and vomiting, with great languor, lassitude and debility. About the sixth day these symptoms were more or less relieved by the coming out of an abundant eruption, which I am disposed to regard as an essential or characteristic part of the disorder. It consisted in irregularly-shaped patches, red and elevated; the feet and hands swelling with a sense of thickening and numbness. There was much itching and burning of the skin, and at this time a second febrile paroxysm often came on, and the pains of the joints were in many, aggravated to their former severity. I saw several cases in which the first stage of the disease, including both local pains and general fever, had passed over with very little notice or complaint, in which this second stage was very violent. Many become sensible on the third or fourth day, of an inflammation and enlargement of the lymphatic glands, in the groin, axilla, on the neck, &c., and these continued swollen and painful for a length of time after convalescence was fairly established.

Very young children were liable to the disease, even from a few days after birth; some were supposed indeed to be born with it. The

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circumstances which induced the belief of their being thus affected, were as follows—the skin was of a scarlet red, the tongue and lips smooth and fiery, the child could not bear to be disturbed, screaming violently if lifted from its place, or if any of its limbs were moved. Below five years of age, convulsions very commonly attended the invasion, and sometimes continued with great frequency throughout the whole attack.

Pregnant women were very liable to abortion, and a very remarkable number of instances of such miscarriage occurred among them. They were usually seized at the very commencement, with violent pains in the back and loins, extending downwards into the thighs, ultimately occasioning the expulsion of the fœtus.

In very old persons, the disease at once occasioned great debility and excessive prostration. In one who had previously suffered much from rheumatism, there was a sort of paralytic affection of the limbs, which could merely be moved, but not to such an extent as to be used in any degree. In several elderly persons, there was left behind an erysipelatous inflammation of one or both legs. In many, regular rheumatic inflammations of some joint or joints supervened during convalescence. In two young individuals, however, who had been martyrs to rheumatism, there was evident relief from the chronic stiffness and immobility of limbs and muscles, under which they had long laboured. In one, the relief was absolute and entire, in the other, partial and imperfect, yet notable in degree.

A sore mouth was among the symptoms of the Dengue. It usually appeared before or about the time of the eruption. This was often attended with a free flow of the saliva, and a looseness, lividness, and sponginess of the gums, bearing a close resemblance to the circumstances of ptyalism. Ulcers formed in the mouth, which were very painful and irritable, and healed very slowly. In two patients, there was hæmorrhage from the gums and fauces. The most ordinary consequences of Dengue, were in the first instance the production of a permanent and remarkable degree of languor and feebleness, and beyond this, and somewhat less universally, a liability to very acute pain in some joint or muscle, attended perhaps, by swelling and tenderness; this was variable, and shifted singularly from point to point; in the knees to-day, in the ancles to-morrow, and the wrists the next day. In the greater number those joints or parts which had been attacked in the first stage of the disease, were specially thus tortured. When regular rheumatic inflammation of such joints came on, it endured with unconquerable tenacity. A great proportion of our population is even now complaining of acute sufferings on motion from this cause: in not a few it seems to increase rather than diminish with the lapse of time."

In New-Orleans the epidemic as described by Dr. Dumaresq, put on this livery:—

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Languor, disinclination to muscular exercise, slight chilliness, with dryness of the skin and fauces; the tongue at first is covered with a whitish coat, which afterwards gives place to a yellow; at which time there is a degree of nausea, in the generality of instances trifling. From the first, great thirst is experienced, pain and heaviness of the head, depression of the mental powers, frequent yawning, and disinclination to food. These symptoms generally made their appearance in the course of the day, and in the evening, fever supervened, which gradually increased through the night, and decreased towards morning, when a partial relief was obtained by a gentle diaphoresis. The time of its duration varied exceedingly, according to the different idiosyncracies of individuals. In some, the fever continued but twelve, in others twenty and forty-eight hours, and even to a longer period in a few.

The peculiar phenomena of this fever are pains in different parts of the body; in the head, arms, loins, and down the course of the crural nerve. The pains in the body and extremities are confined to the muscles, resembling those produced by an attack of acute rheumatism. The suffering, I may say with propriety, is extreme; rest can be obtained in no one situation, and a momentary comfort is obtained by tossing about and stretching the limbs.

With a parched skin, and fauces completely dry, rendering deglutition difficult, fluids are frequently demanded, and although the quantity taken in some instances is great, no part appeared to escape by the skin, and very little comparatively from the kidneys.

The headache during the fever is not uniformly severe, but is more so in its decline, generally affecting one side of the head more than the other, and with its concomitant symptoms resembling cephalæa hemicrania.

In some persons the fever was slight, with little prostration of strength, accompanied by cough and soreness of the fauces, terminating about the second day with a scarlet eruption. In these, so much were the appearances like scarlatina, that a few old practitioners pronounced it to be that disease; and the appearance of almost every person, a few days after the fever had gone off, being marked by a continuous rash over the face, body, and extremities, seemed to favour this opinion very much. But from the short duration of this eruption, the type and severity of the fever preceding it, (being synochus rather than typhus,) and the absence of some of the particular symptoms of scarlatina, clearly prove it was not this disease; the state of convalescence also being marked by appearances which are never discovered in that succeeding the latter disease.

A peculiar symptom of this fever in infants, is convulsions—during which the body is bathed in a copious sweat; the action of respiration seems almost suspended; the eyes are fixed, wildly staring in a direct line from the body; the nostrils are dilated, and there is apparently an effort made to take breath, which a fixed position of the ribs, and perhaps a spasmodic contraction of the diaphragm will

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allow but in a very limited degree. The partial respiration is accompanied now and then with a low moan, which is caused, I think, by the difficulty attending the effort in making a full inhalation, which is wholly impracticable during the paroxysm, rather than from any pain the little sufferer is experiencing at the time.

The convulsion is of short duration, and attended with very little muscular effort; in most instances none. The common mode of treatment is, plunging the child in warm water, and holding it there until the breathing becomes free, or else merely bathing the extremities.

In young persons of a good constitution, the disease has been as severe in its attack, as in those of a more weakly habit, but reached its acme much sooner, and terminated more kindly in the former, and more so in the latter than in very old persons, and those who were rendered imbecile from previous bad habits.

A person on the disappearance of this fever would attempt to rise from bed, feeling not much loss of strength, and a consciousness of being able to move about and attend a little to business; but how egregiously would he be mistaken when he assumed the upright posture! The joints felt as if fettered or anchylosed, and the advance of one foot or leg beyond the other, would cost more pain and effort than the purpose for which it may have been advanced was worth—aye, a thousand times told!

This was a singular termination of the disease, leaving sufferers from the fever hardly able to move about; and indeed, the appearance of persons in the streets, and every where else, must have been truly pitiable to a healthy stranger; the apparently great and often fruitless efforts to make a step; here one would be seen dragging his legs after him, supported on crutches; and there another with limping gait and various contortions of countenance, bespeaking that his tardy progress was made at the expense of his bodily feelings.

The greatest pain in moving the leg, was experienced down the gastrocnemius muscle and about the tendo achilles; although pain was general in the muscles and down the course of the tendons. The muscles of the arm were also painful; and the wrist in some instances was swollen, and not yielding to the slightest motion without giving much pain.

The muscles of the neck were likewise painful, stiff, and producing what is called stiff-neck, (loxia,) which in some continued longer than the stiffness in the limbs. A singular case was related to me by a physician, of a lady, who, whenever she would attempt to walk, and had placed her foot on the ground for that purpose, experienced a severe pain darting from one of the toes up the leg and across the body to the clavicle of the opposite side. She was relieved by the application of a blister below the clavicle.

In many cases, after the fever had gone off, a violent purging supervened, with severe griping pains in the abdomen; and the persons were harassed with a constant desire to go to stool, so strong that it

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must be immediately gratified, and the result would be, a small quantity of frothy mucus mixed with blood and little bits of fæces. In a few of these which came under my own care, I found the most efficacious mode of treatment in the application of flannels, wrung out from hot water, to the abdomen; with a moderate dose of calomel combined with a little opium, administered in the form of pills. Soon after the applications of flannel and the exhibition of the medicine, the pains, with the violent desire to go to stool frequently, ceased as if by a charm, and the patient felt tranquil and disposed to sleep.

Another singular affection noticed in many persons after the fever, was a swelling behind one or both ears, immediately over the mastoid process. The appearance of this swelling, with the pain attending it, resembled very much an incipient phlegmon; but its continuance was short, and its disappearance rather sudden, without suppuration and without the aid of any local application.

The most singular local affection which supervened after the fever had entirely disappeared, several cases of which I was informed about, and one I had under my own care, was an itching sensation in the urethra throughout the whole track, with a slight discharge of pus, and a severe burning pain at first about an inch down the canal, experienced in passing water. These symptoms resembled so closely those of blenorrhœa luodes, that the disease was pronounced to be that; but from the asseverations of patients to the contrary, it was attributed to the fever; and I believe with propriety."

The phenomena of this malady as it appeared in Havana, are given by Dr. Tuite, from publications made by two Spanish physicians, Dr. Munos, and Dr. Hevia. They are embraced in the extract that follows:—

"The disease as it manifested itself in that city, observed two distinct periods. The first, characterised by high febrile excitement and acute pain; the second, distinguished by chronic ailments and the absence of fever. The premonitory symptoms which mark an attack of the disease are, great weight in the head, pains in the legs, and in the loins, proceeding to the arms, accompanied by general prostration of strength and mental uneasiness; the pulse is frequent and contracted: as the disease gains force, the skin becomes hot and dry, the countenance and eyes inflamed, the pain in the head increases to an acute cephalalgy, the pulse developes itself and becomes full and frequent, and even hard in the more robust, with the other accompanying symptoms of inflammatory fever, which are more or less marked, according to the idiosyncrasy of the patient, or his peculiar condition when attacked by the disease. In some, the tongue was white and moist: in others, dry and inflamed: while in others

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again, foul in its centre, and red on its margin. In the first mentioned class, the head was rather weighty than painful; the urine clear and without deposit: in the second, the pain in the head was acute, and the eyes resisted the impression of the light, the urine high coloured: in the third class, although the pain and weight of the head was more supportable, it was however accompanied by vertigo and fainting; the urine was not inflamed, but turbid.

It is remarked by Dr. Hevia, that those who were labouring under the effect of chronic diseases at the time they were attacked by the Dengue, felt an increase of all the symptoms of the previous disease; but by way of compensation, sometimes found themselves happily rid of their complaints with the termination of the Dengue. It is a striking peculiarity of this fever, that there was little or no thirst during its continuance; so much so, that the physicians were obliged to force their patients to accept even of the most agreeable draughts.

The symptoms which we have described, continued to increase in force, and reached their crisis, within the first twenty-four hours: a perspiration then ensued, and as it flowed, the disease gradually diminished during the second twenty-four hours, so that on the third day the patient was left without fever, but still subject to those chronic ailments which marked the commencement of its second period.

In the second period, there was an absence of fever; inappetency, vitiated taste, the mouth bitter, the head light, and subject to vertigo in the more debilitated; muscular prostration, pains in the joints, nervous contractions, swellings of the extremities, infarction of the lymphatic glands of the neck, axilla, and groin. Thus we see that the disease evidently commences its attack on the nervous and *muscular* systems; the sanguineous system then becomes sympathetically affected, producing fever and its attending symptoms, and if the disease does not terminate by abundant perspiration, or a copious flow of urine, the symptoms of the second period then supervene. It is classed by Dr. Bernal Eunos among the *mucous* or *lymphatic* fevers of the ancients, or the Adeno-miengeal fevers of the *moderns*.

As to its diagnosis, it is remarked by the same gentleman, that the appearance which the Dengue first assumed, was so similar to that of the yellow fever, that had he not been aware of the fact, that those who laboured under it were natives or acclimated, he himself could not have distinguished the two diseases. Its prognosis is very favourable. Out of 2500 men who were treated for this disease in the military hospitals of the Havana, not one died. It has, however, in some cases left very distressing chronic complaints in the subjects of its attack, and which have persisted for many *months*.'

In the island of St. Christopher, it appeared, according to the observations of Mr. Squaer, a British army surgeon, as given by Dr. Hays, with the following symptoms:—

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"Very violent headache, severe pain in the temples, shooting towards the forehead; frequently it was situated in the back of the head, stretching towards the neck and shoulders, which was one of its most painful positions, as the least motion created great agony, and it was difficult to find an easy posture for the head. There frequently was a painful sensation as if the head were drawn down towards one side or another; pain, or at all events, a disagreeable sense of stiffness, was felt in the eyes, especially when moving them from side to side, or raising them upwards: the patients expressed it, by saying the socket felt as if it were too small for the eyeball; frequently the eyes felt painful to the touch; the adnata was slightly tinged with red vessels.

Shooting pains were at the same time felt in the back, loins, and thighs, particularly immedieately over the knees, which soon became fixed aad uncommonly severe: the same thing took place in the arms, forearms, wrists, fingers, knees, ancles, and feet, causing lameness; the calves of the legs were similarly affected.

A roseolar eruption came out early in the disease, which covered the wrists and extended up the forearm: it spread over the backs of the hands; the ancles and feet were in the same state; it was sometimes elevated in large wheals, and when it affected the neck, it was extremely painful: the hands and feet were considerably swelled.

In delicate females, the roseola came out on the face in patches, and on different parts of the body, and remained for several weeks after the other symptoms had disappeared.

It need hardly be added, that motion of any kind greatly aggravated the symptoms, and the gentle pressure of the hand could scarcely be suffered.

Fever came on simultaneously with these various affections, or very soon was observed in conjunction with them, marked by a sense of heaviness in the head, and great listlessness, nausea, and loss of appetite, and, in delicate people, the irritability of stomach was sometimes distressing. Severe rigors, and alternating flushes of heat; face flushed; quick, full pulse; and hot dry skin; with, in a few cases, delirium, were also observed. Pain of stomach, sensible to gentle pressure, was present in one or two instances.

The violence of the symptoms and fever lasted from four to five days; but it was never under seven or eight days that all the pains were gone. In most cases, the pains were felt for a much longer time; and in severe attacks, pain and tenderness to the touch remained in the eyes, hands, calves of the legs, ankles, and feet, for weeks afterwards.

These symptoms varied in number and degree of violence, according to circumstances, and were much influenced by mode of living and constitution, sex, and age.

The soldiers composing the garrison of Brimstone Hill, were less liable to this disease than the inhabitants; and their attacks were not of so long continuance, nor generally so severe. Nearly all the

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officers had it, and it was severe in one instance only. The very general run it took amongst the inhabitants had the effect of its being supposed to be epidemic; in many instances, not leaving a family till every one had been attacked.

The young and robust had smart attacks, and fever of shorter duration, and they did not so often labour under its effects; and were even exempt from one or two symptoms that afflicted people of an opposite description.

Delicate females and aged persons had more protracted attacks, and they suffered more from irritability of stomach; and the roseolar eruption in them was most remarkable; and the feet continued swelled and tender, producing lameness for some time: the fingers were also swelled and painful.

On account of the lingering nature of the disease, many were induced to suppose that, during the space of eight or ten weeks, they had fresh attacks, and were even impressed with the idea that they must have a third attack before they could get well: this was owing to exposure to the cold damp weather, which at first caused it, and consequently easily re-excited the pains they had not entirely got quit of.

This disease, in all the instances I have witnessed, was considered of a simple, and though of a violent nature, yet there was nothing dangerous in it. It has been said to have terminated fatally in one or two instances in this island: in some of the others it has caused death in several instances."

Mr. S. gives the following reasons for regarding it as "a novel and unknown kind of morbid affection:"—

"1st. The extreme violence of the pains in the commencement, and the peculiar sensations they created. 2d. Perspiration was not easily excited. 3d. Thirst was not much complained of, even in the violence of the fever and in delicate females. 4th. The roseolar eruption above mentioned, and the swelling and tenderness of the hands and feet, was not often observed in the cases in the garrison. 5th. Delirium was chiefly confined to delicate females, and aged persons of weak and delicate constitution."

These extracts will be sufficient to make our readers perfectly acquainted with the symptomatology of this Epidemic, as it has appeared in two of the West India Islands, and two cities of the United States. We shall now proceed to the methodis medendi.

Treatment. It would seem that the Dengue, even when not treated *secundum artem*, has seldom proved fatal. The majority of its subjects have sustained and survived the shock

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without the support of our boasted *polypharmacy*. Nevertheless, cases have occurred, and these perhaps not a few, which required the interposition of art to conduct them to a favourable issue; and a still greater number, that left to themselves would have terminated favourably, have been signally palliated by professional aid. In giving the history of its treatment, we shall continue the order adopted in its symptomatology.

In his method of cure, Prof. Dickson appears to have differed from many of his Charleston brethren, especially in the use of the lancet. The extracts which follow, will present the results of his ample experience:—

"The violence of the early symptoms of this singular disease, seemed to call imperiously for the most prompt and active measures. The *lancet* was accordingly resorted to by many practitioners, who, without any hesitation, ascribed to it a notable power in controling the force of the attack. Others were content to deplete by cathartics, each employing his favorite among the widely-extended classes of remedies. The ordinary domestic practice, and a very large majority of the cases were treated without professional aid, consisted in the administration of a mild purgative, combined with, or followed by a diaphoretic, as the solution of Epsom salts in infusion of seneca or serpentaria, or warm lemonade, until the bowels were freely opened; the patient was then covered up moderately warm, and hot drinks given from time to time, to produce and keep up free perspiration, the parts most pained being fomented with warm water or bathed in spirits. Such was the practice which I followed in a few of the first instances of the disease which fell under my care, but an early observation of the happy influence of opium over the extreme suffering of the sick, led me to depend on it ultimately in the very first instance, and the progress of the season gave me a very great number of opportunities of testing the propriety of the practice. Being called to a lady in the seventh month of her pregnancy, menaced most seriously with premature labour, I prescribed one hundred and twenty drops of laudanum at once, to be repeated pro re nata; after three or four doses she fell asleep, and awoke almost entirely free from pain. Another within a few days of her time, was not only quieted in a similar manner, but absolutely relieved from all inconvenience by the same treatment; rising out of bed the second day, going through the eruption almost unconsciously, and in ten days after, being favourably delivered of a fine healthy child. When summoned to a patient, it became my custom to administer such a dose of opiate as seemed indicated by the severity of the attack, from a tea-spoonful of laudanum down to such a dose of this preparation, or of the tinct. opii camph. as was suited to age and other circumstances. If the deter-

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mination was to the head, this was bathed with spirits, while the feet were immersed in hot water; if there was pain in the limbs, hot fomentations were applied. The dose of anodyne diaphoretic was repeated at proper intervals, from one to two hours, until the symptoms were relieved, usually alone, but not unfrequently in union with the spt. mindereri, a combination which seemed to me particularly applicable here. If the pains subsided on the subsidence of the febrile paroxysm, the patient was let alone, rest, low diet, and quiet being enjoined; if he went through the second stage, without a return of local pain or notable febrile excitement, he was still not interfered with; if there was such an exacerbation, (a very common circumstance, as before mentioned,) the same plan was again resorted to, and with similar advantage.

I am content, without making any attack upon the opinions or practice of my professional brethren, to claim merely an equal degree of success with that obtained by other modes of management. If the patients, subjected to the above mild remedial regimen, suffered no more at the time, and convalesced as rapidly as those who were more actively depleted, they must be considered as on the whole, gainers. Yet I think I would be both safe and impartial in maintaining that the pains which they endured were sooner relieved—that theyunderwent less constitutional derangement—that they fell into a less degree of general debility—that they of consequence convalesced more rapidly—and that although they did not obtain the privilege of absolute exemption from the rheumatic pains, stiffness and incapacity, which continued so long to haunt our community, that they yet were less subject than others to these inconveniences."

The method pursued in New-Orleans according to Dr. Demaresq, was still milder than that recommended by Professor Dickson, as may be collected from the following extracts:—

"The general treatment of the disease in this place has been very simple: in most instances nature was allowed to effect a cure without the interference of art; and the progress of those towards amendment who were treated medically was not more rapid than those in whom the disease was allowed to run its course, and have completely its own way.

Fluids are often required, from the severe thirst which was truly distressing, and they were given warm that they might afford present relief, and also promote diaphoresis, which, when it did take place, mitigated the severity of the fever and pains in various parts.

A cathartic was administered to some after the fever had subsided, and the scarlet eruption was found to appear somewhat sooner in them than in others who took no purgative medicine; but the only difference consisted in this. The eruption was not general in its appearance, many persons who had had the fever being totally exempt

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from it, but having all the other difficulties which appeared after the termination of the fever.

A few individuals have had fresh accessions of fever of the same kind since its first attack, but I think it must have been caused by intemperance in eating and drinking.

For a few days after the fever, the appetite is very poor, and every thing that may be taken as food or drink has a highly bitter taste; this soon wears off, and the appetite generally returns with the natural taste of things."

In Havana, the means of cure found successful by Dr. Munos, and the other physicians of the island of Cuba, were even more simple than these.

"A great proportion, says he, were cured by observing diet, using partial baths of the feet and arms, sinapisms, laxatives, glysters, and diluents, without the administration of any medicine. Topical bleeding was seldom found necessary—general bleeding never; on the contrary, its effects were always prejudicial, if not fatal. The reader would perhaps be astonished, were I to assert, that with a treatment equally mild, a great proportion of those labouring under the yellow fever, might be cured, and that with the exception of leeching, which I found extremely beneficial in this disease, I was never in the habit of using more active remedies than those here prescribed for the first period of the Dengue, and that with success.

The treatment in the second period of the disease, consists in oily and opiate frictions, applied to the painful parts, rendered more or less stimulant; anodyne cataplasms, fomentations, and lotions of the same class and emollients; slight doses of magnesia when the tongue was foul, or the mouth bitter; slight bitters when the tongue was clean, and the patient without appetite; warm clothing; general baths and emollients when the pains were acute, and the rigidity of the limbs considerable; alkaline and resolving unctions when the pains were dull, and the swellings of the articulations œdematous; salt baths when the patient was debilitated and his limbs swollen; slight diaphoretics and mild sudorifics opportunely administered. Such were the remedies which were prescribed in this period of the disease, according to the particular circumstances of the patient."

The therapeutic experience of Mr. Squaer, in the island of St. Christopher, is contained in the succeeding paragraphs, which, taken in connexion with what we have just cited from other observers, will be found sufficient, perhaps, to guide the physicians further north in their first efforts, should it appear among them. It should be borne in mind, however, that in changing its latitude it may change its character so far as to

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require a treatment considerably different. We should expect, indeed, that it would assume a more inflammatory nature and call for a bolder use of the lancet, than it seems to have required in the south. Mr. S. remarks that—

"In treating this anomalous disease, the objects had in view were to lower increased action in the system, and to restore the deranged functions of the vessels of the skin, which might be almost considered the cause of the disease. In accomplishing these purposes, few means were required. The pain of head, and great degree of excitement in young men of stout habits, sometimes required bloodletting, but, generally speaking, it was seldom employed: there was a much better remedy found, which nearly answered both purposes, and that was cathartics. Aloes, colocynth with a combination of calomel, in the following proportions and manner of exhibition, was the usual plan adopted:—

℞. Extract Colocynthidis comp., Aloes Socotrinæ, Gummi Resinæ, āā gr. iij.; Hydrargyri Submuriatis gr. xxiv. fiat massa in pilulas duodecim dividend sumantur tres h. s.

On the following morning, the pills were assisted by doses of infusion of senna, to which was added a small quantity of neutral salts, or supertartrate of potass. This plan generally required to be repeated once or twice.

When the action of the bowels was thus increased and kept up, the febrile action and violence of the symptoms underwent an almost immediate diminution, particularly the head-ache, which was the most distressing symptom. Cold water was at the same time applied to the head, by means of folds of linen.

To determine to the skin was another mode of treatment employed, to remove altogether the pains of the body: this was effected by using the warm-bath, and giving small doses of antimonial or James' powder, with a few grains of calomel, three or four times a day; and keeping the body warm, from the commencement of the treatment.

The diet was light and plain. Wine, when it might be advantageously employed, was given.

When pain of stomach was present, which very rarely was the case, and when it was increased by pressure, its removal was always of the first moment; in doing which, the counter-irritation occasioned by the application of vesicants was a very powerful remedy. Gentle purgative injections at the same time were essentially useful."

Mr. S. mentions the case of a negro, in whom the disease proved fatal by bathing in a river. Dr. Vance, whose observations were given in the last number of this journal, has known a similar result in several cases.

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Dr. Hays informs us that he had received intelligence that in the islands of St. Thomas and St. Croix, the disease assumed nearly the same character as in St. Christopher; but it seems to have called for stronger antiphlogistic measures. In Jamaica, according to a letter from Dr. Stennett, it was called an epidemic acute rheumatism. He saw one case in which the efflorescence bore a striking resemblance to that of measles. It did not affect the negroes so generally as the whites. The Dr. found—

"Copious bleeding at the beginning in able bodied people, followed by small doses of Epsom salts and tartar emetic, so as to produce slight nausea and action on the bowels, together with salt water baths, generally to remove the disease in three days."

Of its Nature and Affinities. Dr. Osgood (see our last No.) argues that the Dengue is a modification of yellow fever. Dr. Munos seems to be of the same opinion, and asserts that the two diseases require a similar treatment. Dr. Dickson on the other hand, thinks it a congener of scarlatina, of which indeed, its history must remind every one who is acquainted with the phenomena of that disease. For ourselves, we perceive in it many affinities with the influenza, which appeared in the Western country in the winter of 1825–6. On the whole, however, it seems to have legitimate claims to the character of a distinct malady, which should be referred to the genus of Enanthesis of Good, embracing scarlet fever, measles, and nettle rash. Mr. Squaer, indeed, speaks of the efflorescence as presenting, in some cases the wheals which characterize the last complaint.

Of its Origin. Mr. Squaer informs us, that its appearance in the island of St. Christopher was preceded and attended by cold, wet, and windy weather; and appears to regard it as referable to that state of the atmosphere; and Dr. Stennett remarks, that the weather in Jamaica, at the period of its prevalence was unusually cold and rainy; but Dr. Dickson, states the climate of Charleston, up to the time of its appearance, to have been dry, temperate, and pleasant; a sufficient evidence that its origin cannot be explained by a reference to

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the sensible qualities of the atmosphere. Its cause, like those which occasion scarlatina and influenza, not to mention some other febrile affections, the ætiology of which is *supposed* to be well understood, is no doubt undiscovered. Dr. Dickson, and he alone as far as we know, regards it as contagious, an opinion which Dr. Hays considers untenable. Dr. D. it must be admitted, has not supported his assertion by an adequate citation of facts; but we see nothing preposterous in the belief of its contagious nature. Are not the measles contagious? is not whooping cough contagious? may not scarlatina propagate itself? and does not the hydrophobia disseminate, itself, among dogs by the bite? All these questions must, we apprehend be answered in the affirmative; and yet cases of these maladies perpetually occur, when they are epidemic, without our being able to trace them up to communication with the sick. The last unquestionably originates, sporadically, and without the bite of a rabid animal, but is afterwards communicated by the inoculation of a secreted poison. Few positions in ætiology seem to us indeed more certain, than that there are diseases, some of whose subjects receive an impress from an agent residing in the general atmosphere, while others are infected by exhalations from the sick.

The small pox and syphilis are notoriously contagious, and still the persons who *first* had those disorders, could not have taken them from others; a remark that will apply equally to the diseases just enumerated, and, indeed, to all contagious distempers. This obvious truth seems to us, to be overlooked, by many of those who strenuously insist, that certain diseases are not catching, because the majority of cases are referable to an epidemic constitution of the atmosphere. The whole of this subject is occult, and presents much for future investigation.

TO SUBSCRIBERS.—For want of space we have been obliged to omit the entire department of Miscellaneous Intelligence.

The Editor regrets that the infirm state of his hands from the severe burns received in September, should still be a cause of delay in the publication of the Journal. He is happy to say, however, that the December number will appear by the end of that month.

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THE

WESTERN JOURNAL

OF THE

MEDICAL & PHYSICAL SCIENCES.

DECEMBER, 1828.

ESSAYS AND CASES.

ART. I.—*A History of the Malignant Intermittent Bilious Fever, which prevailed in and about Indianapolis, the capital of the state of Indiana, in the summer and autumn of* 1821. By Dr. SAMUEL GRANT MITCHELL.

Climate, soil, modes of living, and various other common causes, exert so great an influence on febrile diseases, that I shall state what I have observed at Indianapolis on these subjects, as an introduction to the history which I am about to give.

The new capital of the new state of Indiana, is built, or rather is building, on the east bank of the west fork of White River, a principal branch of the Wabash, immediately below the mouth of Fall creek, in lat. 39° 45′, or nearly that of Philadelphia. The river side of the town plat is about half a mile from the water. It is on an extensive alluvial plain, elevated 12 or 15 feet above high water mark. This plain, previous to the year 1820, was heavily wooded with white and blue ash, walnut, hickory, cherry tree, sugar tree, linden tree, elm, mulberry, and the other trees of the fertile lands of the West; with a thick undergrowth of pawpaw, spicewood and prickly ash. It affords an abundance of pure and pleasant limestone water. The adjacent country abounding in beech timber, is level, and from the argillaceous nature of

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the soil, its surface is more wet than that of the bottom lands, the water of the spring rains being in many places accumulated into morasses and ponds. The town plat is dry, but adjoining to it there are two bayous from the river, which, however, might be easily drained. In digging into the plain, after passing through 4 or 5 feet of soil and loam, we come to gravel, which continues for 15 or 20 feet, after which we meet with nothing but white sand, as far as perforations have yet been made.

In the spring of the year 1821, the heavy growth of timber which covered the site of the projected town, was cut down, and most of it suffered to lie where it fell. This was done to facilitate the surveying of the lots. They were offered for sale, and immediately purchased either by speculators or actual settlers. Persons of all kinds forthwith crowded to the spot, and the number in a short time amounted to nearly six hundred; who were, of course, in general, strangers to each other, and to the climate. They were of necessity, huddled together into tents, camps, shanties, and leaky cabins. Vegetable food was scarce, and the poorer classes especially, lived chiefly on fish, venison, and other wild meats, which were eaten with very little salt, from the scarcity of that article.

I arrived in the month of July, 1821, which together with the other summer months, was unusually warm and wet. In the forenoons we very commonly had copious showers, and in the afternoons fair weather, with intense heat. In the miserable habitations of the newly arrived inhabitants, so great was the humidity, that every article of furniture and dress was covered with mould and mildew. This excess of heat and moisture gave extraordinary energy to vegetation, and at the same time contributed to a rapid decay of those plants, both woody and herbaceous, which had been either trampled or cut down. In many parts of the new town, the vegetable putrefaction, was, indeed, so rapid as to give rise to exhalations offensive to the smell. Insects of all kinds were exceedingly numerous and annoying.

On the 20th of July, I observed near the bank of the river, a number of dead cats and dogs. The inhabitants said they

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had died from eating fish; but I began to look out for difficult times. I repeated to my friends the couplet from Pope's Homer—

> "On dogs and mules the infection first began,
> And last the vengeful arrows fixed on man;"

which turned out to be prophetic; for on the 25th of the same month (a few scattering cases having previously occurred) an epidemic fever suddenly broke out. It began on the side next the river, and spread eastwardly, till like the "pestilence that walked in darkness" in ancient times, it involved our whole population. No disease could have been more general. It is said that there were only two persons in the whole town but what took medicine; and no less than seventy-two, or about an eighth part of the whole population died. The physicians suffered with the rest. My partner Dr. Dunlap and myself, both experinced violent attacks, and from premature exposure suffered several relapses.

In the month of September the fever was most malignant and fatal; early in October the nights grew cool; and some cold rains occurred during the first week, when the number of new cases rapidly diminished; and, after the eighth of that month, ceased altogether; the epidemic having, indeed, exhausted nearly all the subjects which the young town could furnish.

The disease assumed, even in its worst attacks, an intermittent type. In a great number of cases it was mild and manageable; but others presented all the characteristics of a malignant congestive fever. In its most terrible form, it was the *algid* intermittent of Alibert. Many of the most dangerous cases, however, commenced as simple intermittents.

At the very beginning of the bad cases, there was great diminution in the size of the external parts of the body; and the countenance of the patient was altered and looked more acute. The tongue varied with the stages of the paroxysm, being white, red, yellowish, and dark brown or black. The last looked like the stain of grapes, while the redness of the organ was similar to that occasioned by poke berries; and of all the appearances, gave the most unfavorable indication.

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The skin in many cases was yellow; sometimes dry, but oftener cold and clammy with sweat. The patient was often soporous, and I observed that this symptom was extremely portentous when it followed the chill. This, in the worst cases returned daily, and sometimes twice a day, constituting double tertians, quotidians, and double quotidians. I saw a patient late in the evening, and said, you have a severe chill: 'yes—said he—I have a double *twister;* this is the second chill I have had since morning attended with an icy coldness; my first shake lasted four hours.' He was destitute of a pulse; but by the assiduous administration of remedies, he recovered. In some cases the patient was cold for 12 or 15 hours. In the first paroxysm, the coldness sometimes extended to the knees: in the second, to the whole body; in the third, would prove fatal. In cases of unfavourable omen, there would be a clammy state of the surface, and its insensibility would be so great, that the strongest irritants could not excite it. The arteries of the wrists would feel like a small, round, switch. They were in fact, almost empty; still this was called a corded pulse, and made the occasion for bloodletting, under the operation of which, the patient sometimes expired! The thirst and anxiety of the patient were often very great. In some instances there was a profuse perspiration, with icy coldness of the surface; as I had seen it in the pneumonia typhodes, or cold plague of 1812. This condition was highly dangerous, as Alibert had already observed. "The danger of the fever," says he, "actually increases as the sweats become more copious and general; the skin appears to be in a state of complete atony; all the pores being open, give vent to the sweat, which is thick, viscous, and cold, and so copious sometimes, as even to pass through the bed." Desperate as these cases were, our remedies often proved successful beyond the most sanguine expectations.

In the malignant cases, vomiting almost uniformly occurred, and a dark, bilious matter was thrown up. In the month of August, I found nearly every tenant of a cabin, puking at the same time. They were thirteen in number.

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Such were the leading symptoms of this fever; but in different cases it concentrated itself upon various organs of the body, constituting besides the algid, soporose, and diaphoretic states of Alibert, his dysenteric, rheumatic, nephritic, and cephalalgic forms of fever. In several instances I saw it produce epileptic convulsions.

A more extended enumeration of symptoms is unnecessary, as what I have related must disclose the nature of this disease, and will therefore proceed to speak of its treatment.

In this fever the danger appeared and disappeared with the paroxysms; but in the most desperate cases there were no perfect intermissions. In the paroxysm, both the cold and the hot stages required separate and specific attention. In the first, I had recourse to every practicable means of excitation, both external and internal. The former were additional bed clothes, sinapisms, hot bricks, and stones, and bags of sand, salt, or ashes; but I preferred to wrap the limbs and body of my patient in flannels dipped in boiling brandy or whiskey, after having well rubbed the surface. I found heat and moisture combined much better than heat alone. As internal stimulants, we gave brandy and laudanum, in large quantities. During this stage, which sometimes continued for ten or twelve hours, I often gave a quart of fourth proof brandy with an ounce of strong laudanum, and thereby saved the patient. In the hot stage, although the skin might be warmer, and the pulse stronger, the circulation was still sluggish, even at the commencement of the attack. In this stage of the paroxysm, I constantly administered mercurial purges, in great quantities, for the bowels were costive. I frequently gave a drachm of calomel, at once, and repeated the medicine, in half drachm doses, every two hours, until large bilious discharges were produced. As auxiliaries, in the fulfilment of this indication, I never resorted to senna, castor oil, salts and other medicines of this kind; regarding them as incapable of accomplishing that which calomel could not effect. In favor of the liberal and long continued use of this medicine, I was accustomed to reason with my patients, and when I could not persuade them to agree to its further employment,

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I resorted to disguises, and persevered in my plan, without their knowledge or consent. Thus I would rub half an ounce of the medicine with half a drachm of bark, and exhibit it in proper doses, as a purging powder. In this manner, I have given pounds of calomel, since I came to Indiana; and I here solemnly declare, that I have never lost one patient whose death I could ascribe to that medicine; while hundreds have been cured by myself and friends by its liberal use. True, it frequently occasioned a sore mouth, which sometimes proved dangerous, or protracted, but its beneficial operation was more than a compensation for these sinister effects. The occurrence of a salivation was not always the sign of a removal of the disease; and it seemed to be necessary to the safety of the patient, that the bilious evacuations should be kept up. To accomplish this when a sore mouth admonished me to discontinue the calomel, or I feared a violent ptyalism, I was in the habit of resorting to a powder composed of equal parts of aloes, gamboge, and rhubarb, which answered fully as a substitute for the disguised calomel. Sometimes, however, I merely added rhubarb to the bark.

For the vomiting and gastric heat, my friend Dr. Dunlap, recommended to me a medicine which he had found to succeed, perfectly, after the carbonate of potash, magnesia, and the aromatics had entirely failed; which, in fact, they generally did. It was *opium*, which produced effects sufficient to justify the epithet, 'divine remedy' applied to it by the ancients. We frequently gave from one to five grains of this medicine. It stopped the vomiting without in the smallest degree retarding the cathartic operation of the calomel.

While the calomel was still operating, I resorted to the cinchona, and found the two medicines in no degree incompatible with each other. I generally gave a drachm of good Lima bark every two hours, mixed in a glass of brandy. About one hour before the return of the icy coldness, I gave from one to three teaspoonsful of strong laudanum. It may be said, once for all, that in the intermission, Bark, brandy, and laudanum, in large doses, constituted our anchor of hope. I find in the books no examples of the large and early exhibition

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which we made of these powerful remedies, which I have enumerated, but their use undoubtedly saved hundreds of lives.

Few cases of this fever either required or admitted of bloodletting; and, as I have already said, there were cases in which it proved fatal. Among those which constituted exceptions to the prohibition, I may rank my own. I was bled copiously, by Dr. Dunlap, three times in 24 hours. I had a great difficulty of breathing, with a slow, hard, and irregular pulse, which was relieved by the evacuation; and the Bark, brandy, and laudanum, finished the cure. As a means of preventing relapses, I found the daily use of an infusion of wormwood, colomba or chamomile, to possess very considerable efficacy.

I wish in this place to enter my protest against the use of emetics and nauseants, in all congestive bilious fevers like that which I have described. If these fevers have an emetic stage, I have not been able to discover it. The experience of others in other places may, however, have been different; for, as I stated in the beginning, differences of climate, modes of living, &c. give rise to great diversities in the character of our fevers. In this way only can I reconcile with my own experience, that of a distinguished professor, who, in treating malignant fevers, relies exclusively on mercurial cathartics, and in the intermission does not resort to tonics. Such a practice has not succeeded with any physician of this place.

In concluding this history of a fatal epidemic, I consider it but an act of justice to the physicians of Indianapolis to say, that during its prevalence, their intercourse with each other afforded no support to the adage that 'doctors will differ.' At an early period they were led to form nearly the same opinions on its treatment, and cherishing the same zeal for the afflicted, they were united in their efforts, and contributed all in their power to sustain and encourage each other in the trying scenes through which they had to pass. These were greater, than those who have never witnessed an epidemic in the depths of a remote wilderness, can easily imagine; and could not have been successfully encountered without union and reciprocal aid.

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From the year 1821, down to the present autumn, the fevers of Indianapolis have been gradually abating in their violence; and in the number of persons attacked; thus confirming an opinion that I have often expressed, that the capital of the state of Indiana is not an unhealthy town.

Our diseases are gradually becoming more inflammatory. During the present autumn we have had an epidemic bilious fever, but although our population amounts to 1200, it has proved fatal but to four grown persons, and four or five children. Our principal remedies have been the lancet and mercurial purges, the bowels being generally costive. The Bark in some instances, evidently did harm. When, however, in protracted cases, the disease assumed an intermitting type, it was speedily cured by brandy and the sulphate of quina.

Persons emigrating to Indiana, especially those who settle near the water courses, are liable the first year, to autumnal diseases; but they are generally of a mild kind, most commonly the ague and fever.

Indianapolis, Nov. 11, 1828.

ART. II.—*A fatal case of rupture of the bladder, from Urinary Calculi, in an Ox.* Communicated in a letter from Dr. JOHN COOK BENNETT, of Circleville, to Dr. Jedediah Cobb, of Cincinnati.

Circleville, Ohio, Dec. 2d, 1828.

DEAR SIR:—

I send you some specimens of Urinary Calculi taken from the kidneys and bladder of an ox. The animal was a steer, two years old last spring, belonging to the Rev. Joseph Hays, of this county. From a calf, he at times appeared to be ill, and Mr. Hays supposed that he was afflicted with the colic, and gave him common salt, which appeared to afford temporary relief. To these attacks, as they were generally slight and of short duration, his owner paid but little personal attention. The last was upon the 15th November, ultimo.

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In this, the animal expressed his sufferings by stamping with his hind feet, switching his tail, and making ineffectual efforts to void urine. There was a considerable loss of appetite for food and drink upon the first day of the attack, and afterwards it became total. With these symptoms he continued until the 17th. At this time he would often turn his head to his side and loins, as though there was pain in those regions. He lay the most of the time. Fever was quite apparent, and towards the last, very high. On the 18th, he expired in agony.

On opening the body, it was found that the bladder had been ruptured at its fundus. The opening was five inches in length. There were about ten gallons of urine in the cavity of the abdomen. Three small stones, about the size of a grain of wheat, were found in the neck of the bladder. The whole bladder and the muscles attached to its neck, to about half their length, were much inflamed. The left kidney had the appearance of having been in a very high state of inflammation, and its envelope adhered so closely, that it was with much difficulty removed. Its lobes and cavities were considerably enlarged, but at this advanced stage, it exhibited fewer marks of inflammation than of gangrene. The omentum and the fatty deposits about the kidneys, were somewhat inflamed. A portion of the fat had assumed the appearance of jelly. The right kidney was a little inflamed, and there were three or four small stones in one of its cavities. The stones contained in the left kidney, were mixed with sand and gravel, the whole weighing near an ounce and a half. The largest were of the size of hazle nuts. Those found in the bladder and right kidney, were perfectly clean and smooth. A part of the stones I send you for chemical examination. They are in the same condition in which they were taken from the ox.

Yours Respectfully,

JOHN COOK BENNETT.

JEDEDIAH COBB, M. D.

EDITORIAL NOTE.—Dr. Cobb having favoured me with the specimens received from Dr. Bennett, I submitted them to

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examination, and will here state both the experiments and their results.

I. *Physical characters.* The calculi are of various sizes, from millet seeds up to hazle nuts; quite amorphous; some parts of the surface smooth, not (apparently) from friction; but, generally, rough with adhering particles; the outside of a dull russet colour—inside a pale yellow; friable under hard pressure with the fingers; more or less in concentric laminæ and cellular, like certain masses of tufa; on the whole, resembling irregular and loose masses of dry, yellowish clay; the smell offensive, and in some degree urinous. Under the blow pipe emitting the same odour, swelling up, blackening, burning with flame, sending forth a blue smoke, and disappearing before the continued application of heat.

II. *Chemical characters.* The specimens were subjected to experiments which afforded the following results:

1. They were insoluble or nearly insoluble in water, in which they swam, when thrown into it in lumps, until all their atmospheric air was expelled.

2. Thrown into a solution of potash, not *entirely* divested of carbonic acid, their dull yellow colour changed to a deeper and brighter hue, with a teint of green. During the process of dissolution, which continued till they were nearly dissolved, they sent out through the supernatent liquor, beautiful yellow clouds. When nitric acid was added to the solution, this colour was destroyed and a copious white precipitate instantly appeared.

3. When heated with nitric acid, a beautiful carmine red was generated.

4. When heated with caustic potash, they emitted the same smell as when under the blow pipe. The odour of ammonia was not perceptible; nor did white clouds (muriate of ammonia) show themselves, on blending the fumes of muriatic acid, from those arising from the mixture.

5. By a solution of carbonate of potash they were but slightly acted on; but in proportion as any dissolution took place the yellow colour was heightened.

From the foregoing experiments is appears, that these calculi are composed almost entirely of *lithic acid.* Their habi-

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tudes under the blow pipe, and when treated with a solution of potash, and with nitric acid, sufficiently demonstrate the presence of lithic acid; while their sparing solubility in water, and the results obtained by treating them with carbonate of potash, and fusing them with caustic potash, indicate the absence of ammonia.

Dr. Prout in his excellent work on urinary disorders, which should be in the hands of every physician, enumerates thirteen species of calculus, as known to the profession, and places the lithic acid at the head. This acid, indeed, constitutes alone a great portion of all the calculi which have been examined, while in its union with ammonia, or in its alternation with other ingredients, it enters more extensively into this class of morbid productions, than any other substance. Out of 823 specimens, the analysis of which is given by Dr. Prout, 98 were composed of pure lithic acid, while it entered as an element into 400 more. It seems to be in a great number of cases, the nucleus about which the phosphates and other materials arrange themselves, and but for which they would not be deposited. Thus, in the opinion of Dr. Prout, it is directly or indirectly the cause of at least two thirds of all the calculi that are formed, in the urinary organs of man. The lithic acid diathesis is the most frequent of all the calculous habits of body. It is in this diathesis, and this only perhaps, that the alkalies and alkaline earth are real, though not infallible antidotes.

To what extent our domestic animals are subject to urinary calculi, is far, I presume, from being known. Indeed, we are reprehensibly inattentive to all their diseases from the study of which we might, by means of sound analogy, derive many lessons of usefulness as physicians. Village and country practitioners especially, attached as many of them are, to rural occupations, and favoured with fine opportunities for observation, might by a diligent attention to the disorders of our domestic animals, and the careful dissection of those which die, contribute many useful facts to the departments of ætiology and pathology; and I strongly recommend Dr. Bennett's example to all the country physicians of the Western states.

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ART. III.—*An account of the production of Epilepsy from protracted bathing in a pond.* By H. GEORGE DOYLE, M. D. of Mayslick, Ky.

On the 18th of August, 1827, I was called to visit the son of a gentleman of this county—a youth of about 14 years of age. On my arrival, I received the following history of his case:—About a month prior to the above date, he had gone to a neighbouring mill pond to bathe, in which he remained the principal part of the day, and returned at night, much exhausted, and enfeebled. The same night, an hour or two after he had retired, he sprang from his bed apparently much alarmed, screamed most violently, and for some minutes continued running and jumping about the room. After the paroxysm had subsided, his parents interrogated him on the subject of his fright,—to which he replied, that he had been pursued by Indians, who designed to destroy him. The father supposing that it was the effect of a dream, desired his son to compose himself, and return to bed. During this night he had two other paroxysms of the same description. The next night the family were again alarmed by a repetition of the attack, and from this time until I saw him, he suffered every night from this nocturnal visitation, until what to others is termed "nature's sweet restorer," was to him the bane of life.

The attacks at this time were sudden and without any premonition of their approach. Upon examination, I found his pulse full and tense, and his tongue considerably furred; he complained of pain in his head, and right side; his appetite was voracious; bowels rather disposed to constipation and the dejections indurated. I took 12 ounces of blood from his arm, which produced syncope, and ordered him 20 grains of calomel with 3 grains of emetic tartar, which operated freely upon the stomach and bowels, and affected the discharge of several very large lumbrici. His fits of screaming, &c. continued. On the morning of the 19th, gave him cal. ppt. 20 pulv. spigelia, grs. 10—and in the evening an infusion of senna and spigelia. The medicines operated well, producing a

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very copious discharges of bilious matter, and several worms. The pains in his head and side were considerably mitigated, his appetite improved, and his tongue got clean; but no effect was produced on his nocturnal fits of tossing and screaming. My attendance was now discontinued, and Dr. Bailey, who resided in the immediate neighbourhood, was employed. He introduced a seton near the occiput—and gave him active purges. For a few days, the disease appeared to yield—the number and violence of the paroxysms becoming less. The seton, however, soon lost its efficacy, and seemed rather to become an additional cause of irritation.

About this time we had a visitation from one of those charlatans, who, under the *imposing* name of Indian doctor, occasionally make their appearance like an epidemic. The unhappy sufferer was, by his despairing and too credulous father, consigned to the care of this monster, who dosed and drenched him with his Indian nostrums, until the "vital spark" was nearly extinguished.

He then became the patient of my friend Dr. Scudder, who visited him January 2d, 1828. His pulse was full and tense, and 80 in the minute,—appetite good—tongue clean—complained of no pain—bowels rather torpid. He took 12 ounces of blood from his arm—applied sinapisms to his feet—and cloths dipped in cold water to his head; but the paroxysms continued through the following night. 3d, He complained of nausea, and took an emetic. 4th, Took 20 grains calomel in the morning, and an infusion of senna and spigelia at night. From this time until the 1st of February, took active mercurial purges every night. They occasioned very copious bilious discharges, but made no impression upon the symptoms. On the 2d, lost 12 ounces of blood from a branch of the temporal artery, and took 70 drops tinct. opii. at night, about an hour before the expected paroxysm. On the following night the tinct. opii. was repeated, but it appeared to have an injurious effect. He was now placed upon an alterative course of mercury, which was continued for a fortnight, when it began to produce violent griping pains in the bowels. His gums remained unaffected. Opium was now combined with the

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calomel, but to no purpose; the painful affections of the bowels continued, and the screaming and jumping returned every night with unabated violence. The blue pill was then substituted for the calomel and opium, and continued until the last of March. The patient had now arrived at the very summit of human suffering; for, in addition to the increased violence of the nocturnal paroxysms, (which were from 7 to 10 in the course of the night,) they would frequently terminate in Epileptic convulsions, and his mind was fast falling into idiocy.

On the first of April, I again saw this patient, in company with Dr. Scudder, and spent an entire night with him, during which he had five attacks, the last of the Epileptic form. In this his whole body was most violently and horribly convulsed. I kept my fingers as well as I could, upon the radical artery during this attack, to ascertain, if possible the effect produced upon the circulation, and found his pulse not perceptible. In about two minutes after the spasmodic distortions of the body had subsided, he was perfectly breathless, and to all appearance dead. We were alarmed at his situation, and, in a moment of anxiety, I threw upon him a pitcher of cold water. It produced a most violent fit of screaming, from which he soon recovered, and was somewhat incensed, at the means employed for his rescussitation.

From the whole history and treatment of this case, I was induced to suggest to Dr. S. the propriety of trying *the nitrate* of silver, assisted by the sulphate of quina, and occasional mild evacuants, for I supposed the symptoms might depend on a morbid sensibility of the stomach and bowels. This treatment, beginning with the fourth of a grain, was continued until six grains of the nitrate of silver were given in the 24 hours, without the least sensible effect being produced upon the disease, when like any other prescription, it was abandoned in despair.

I saw nothing more of this patient from that time, until the first day of this month, (November 1828,) when I visited him again. His father informed me, that the symptoms had become more distressing, and that he now thought of no relief for

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him but in death,—that his intellectual powers were seriously injured,—that the frequency and violence of the paroxysms were increased by exercise,—that he generally had one or two attacks in the day, and that when awake, he was admonished of their approach by a considerable degree of vertigo. He complained of a dull, heavy pain in the head, his pulse continued full and somewhat tense, between 70 and 80,—his countenance wore a melancholy aspect, and his eye was rather heavy, though he was generally disposed to loquacity.

It would be interesting to ascertain what effect tying one of the carotid arteries would have in this case. Though I was induced for a length of time to hope, that the complaint was primarily an affection of the digestive organs, and would readily yield to a course of alterative treatment, I am now as firmly persuaded, that it is entirely dependant on cerebral irritation, and that probably nothing short of the operation of which I have spoken, will probably relieve him. Should he submit to the operation, I have much hope that the result will be such as to suggest the utility of tying those arteries, in other obstinate cases of Epilepsy.

November, 1828.

Remarks by the Editor.

The foregoing case presents us with a train of cerebral symptoms, eventuating in hopeless Epilepsy, obviously produced by remaining too long in the water in the summer time;—a practice to which the boys of this country are addicted: it seems worthy, therefore, of being recorded. While few diseases are more constant in their phenomena, scarcely any is more diversified in its remote causes. With respect to the proposition of Dr. Doyle, to tie one of the carotid arteries, I would say, that it might be well first to try the effect of compressing those vessels. Could the proposed operation have succeeded in the early stages of the diseases, it by no means follows, that it would afford the same result after sufficient time had elapsed for the production of organic læsions of the brain or its membranes. But it is far from being settled, whether in epilepsies attended with manifest determina-

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tions of blood to the brain, the sanguiferous irregularity should be regarded as the cause or the effect of the encephalic irritation, which occasions the convulsions. That turgescence of the vessels of the brain, is *preceded* by some morbid affection of that organ as its cause, is extremely probable; but the convulsions may be the *immediate* offspring of the turgescence, and in that case, if it should be prevented by pressure or obliteration of a part of the vessels leading to the head, the *spasms* might be cured; but it would not follow, that the patient would recover. The affection of the nervous matter, which was the primary link in the chain of morbid actions might, with a different train of symptoms, continue to a fatal termination.

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REVIEWS.

ART. IV.—*Lectures on Anatomy, Surgery, and Pathology; including observations on the nature and treatment of Local Diseases: Delivered at St. Bartholomew's Hospital.* By JOHN ABERNETHY, F. R. S. Surgeon to St. Bartholomew's and Christ's Hospitals, &c. 2 vols. pp. 748. Boston, 1828.

Few names are so extensively and favourably known among our physicians (for we have no mere surgeons in America,) as that of Abernethy. Endowed with strong natural talents, practising his profession in the metropolis of our mother country, and attached to one of its most renowned hospitals, it is not remarkable, that he should erect over his transatlantic brethren, the authority which he undeniably maintains. Of the deference which is granted to his opinions at home, we are not qualified to speak; but suspect it to be less than that of the medical public in this country. This perhaps may be ascribed to the fact, that in Great Britain there are many physicians and surgeons of high domestic reputation, who have written too little to have made themselves known in foreign lands. Mr. Abernethy is not of the class of *prolific* writers, measuring him by the number of his pages, and yet besides and before the present work, he had set forth the history of his experience, and his reflections and speculations on various topics, in two octavo volumes. These, however, till lately were not circulated among us to any great extent, and it was chiefly by his treatise on injuries of the brain, on aneurisms, on tumours, on the diseases resembling syphilis, and, above all, on the constitutional origin of local diseases, that he found a passport to the confidence, we may add the admiration, of the American Faculty. The last of these works has been extensively read if not profoundly studied, and its principles and rules of practice almost as generally adopted. By a sort of acclamation, it has been pronounced a work of

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genius, perspicuous obvervation, and sound common sense. It is indeed the basis of Mr. A's fame in the United States. Of the merits of this popular production, it is no part of our present purpose to speak at large, but we take the opportunity to say, *en passant*, that, while we acknowledge them to be very great, they are not quite sufficient in our opinion to sustain, permanently, the elevated character which it has acquired. The chief error of this treatise is fundamental, and seems to be the offspring of unguarded generalization. The object of its distinguished author is to show, and that too from facts, that a multitude of local diseases are of constitutional origin, and require for their cure a constitutional treatment. To the term constitutional, as used in this case, exception might be taken. Chylopoietic or digestive would be a better word, for it is in a deranged state of these functions, that he finds the source of those topical maladies, and to which he applies the corrective of blue pill, rhubarb and colomba root. Now that a morbid state of the abdominal functions, as well as most of the functions of the whole body, is often associated with local diseases, is what all must admit. But is the local disease so frequently the effect of the constitutional derangement, as Mr. A. would make us believe? We apprehend that it is not; and in this consists the error of his treatise. Impairment of the digestive functions may occasion local disease in a distant part; but local diseases may on the other hand carry disorder into the nutritive organs. In the former case we must direct our first efforts upon the viscera, in the latter upon the parts affected. We know that Mr. A. admits the second member of this proposition, but we hold it certain, that he has laid too much stress upon the first. Many of our brethren moreover, have made a broader application of Mr. A's doctrine, than he ever intended, and have suffered a corresponding disappointment; but passing them by, we may appeal to his more temperate followers, for an acknowledgement, that they have frequently failed in the treatment of disorders, which on the principles of his treatise they ought to have cured. They have abridged the diet of their patients, and exhibited the mercurial pill, rhubarb and

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bitters, by which they have rectified disorder of the digestive functions; but the topical malady has refused to yield, and at length the constitutional has recurred. In most of these cases, the internal derangements are the sympathetic offspring of the local disease, which must be removed before they can be cured. We are aware of the re-active influence of the constitution, and that a local disease originating in the part, when it has once disturbed the general system is rendered more obstinate by that disturbance. But to expect to cure it by moderating or even subduing its distant effects, is quite a delusion. In all such cases the constitutional treatment has its limits; which scarcely extend beyond mere palliation, and if persevered in may do harm. On this subject much might be said, but we must return from our unpremeditated digression, to the new volumes, which are the immediate object of inquiry.

These volumes are composed entirely of the lectures delivered for many successive years, to the pupils in St. Bartholomew's hospital. They embrace the substance at least, of the treatises which the distinguished author had previously given to the world. Strictly speaking, they relate to physiology and pathology as applied to surgery. But in fact, they apply almost equally to medicine, and will be found nearly as valuable to the physician as the surgeon. We know of no book in the profession, that so extensively and intimately connects the two great departments of the profession. Its surgery is not operative—at least in detail; it discusses the causes, symptoms, and prevention of maladies, which suffered to continue, would render operations at last necessary; it treats of the preparation and after treatment, and discusses many of the principles on which the manipulations should be conducted;—but it leaves the rules of action to be explained by the demonstrator of the hospital, when engaged in operating before the class; and hence every physician, however averse to operative surgery, should study these lectures, and we might add, all surgical works on a similar plan. Having by this account, encouraged as we hope the bulk of our readers, many of whom are mere physicians, to enter on their perusal, we

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shall proceed to set forth the substance of such of them as may seem most interesting.

The introductory lecture consists chiefly of a synthetical view—anatomical and physiological—of the human body; in which the author insists, strenuously, on what no one *ought* to doubt, the necessity of cultivating anatomy and physiology as the basis of pathology. He belongs therefore to the physiological school, though he may not be quite a Broussaian. By the way, did not Mr. Abernethy's preceptor, John Hunter, long ago study the structure and functions of the body in health, as the only true preparation for the study of its diseases; and, indeed, have not hundreds of others done the same thing? How then can the disciples of Broussais justly appropriate to themselves the exclusive title of physiological?

In his physiology, Mr. A. is a true follower of his great master. He speaks of a vital principle, or subtle agent resident in the nervous system, on which the functions and phenomena of life depend. He believes mere organization incapable of producing those phenomena. Most of our readers have heard of his controversy with Mr. Lawrence, who does not travel behind the organization to seek for an explanation of the functions of life; and some of them may have seen his controversial lectures, which comprehend an *expose* of the Hunterian physiology. He evidently labours under the conviction, that this vital principle is electricity; though he seems to be rather at a loss for facts and arguments to raise the same conviction in others. At p. vii. he observes:—

"But there are other kinds of subtle matter in the nerves, such for instance, as electricity and magnetism, the motion of which does not seem to be regulated by the same laws, and which are not in general cognizable to the eye or touch, but of the existence of which reason furnishes us with the most indisputable testimony."

Now we humbly conceive, that it has not yet been *proved*, that electricity resides in the nerves, and is the principle of life, though we strongly incline to an admission of its presence and influence in all vital operations. But supposing this fluid to be

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the immediate agent in sensation, muscular motion, secretion, nutrition, &c., do we in that way solve the great problem of life? Certainly not. What is it that causes electricity to exert itself in the execution of the objects just enumerated? What is it that sees, and hears, and feels, and wills, when the electricity which is supposed to reside in our nerves, is put into action by external agents? It is pretty obvious that some other agent, more occult and subtle, must preside over *its* operations, and be the cause of its acting in the modes in which it is supposed to exert itself in the living body. But is that agent ultimate? The inquiry evidently tends to transcendentalism. Happily, however, we may observe and register and reason on the phenomena of living bodies, and investigate the laws which govern them, without ascending to the primitive cause of which they are perhaps remote effects.

But we pass on. Our author is not of that class of physiologists who declare, *ex cathedra*, that nothing can pass through the receptaculum chyli, but a chyle of the same quality. He is willing to open his eyes to facts; and although not a humoralist, but like Hunter, a thorough going sympathist, he allows himself to use language like the following—'As, however, many useless and probably some unsalutary particles find their way into the blood, with the chyle,' &c. This is rather an unwelcome admission, to such admirers of Mr. A. as have stoutly affirmed, in defiance of facts the most conclusive, that the chyle and blood of the same animal are, respectively, under all circumstances of the very same composition and characters. We shall leave them to deplore his heterodoxy, and conclude our notice of his introductory lecture with the following extracts, which we strongly recommend to such of our readers as have not grown rich and gray, in adapting recipies to symptoms—without the ability to analyze either.

"Now the *business* of the course will be properly arranged under three heads. The first is the *demonstrative*, in which the situation and the structure of the parts will be explained and shown. This is the most laborious part of the course, but it most particularly requires your attention. Physiology, or the reasoning on the animal functions, may be learned from books; but no books can convey to

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you a true idea of the shape and structure of the different parts of the body; they are so various in their organization, and so multiform in their appearance, that the true notion of them can only be acquired by the sight. I may add, that it is absolutely requisite that this part of the course should be clearly known, or the succeeding divisions of it cannot be understood.

The second part of the course is *physiological*, in which the functions of the organs, and the mode by which they perform their various offices, will be considered. The student will now be amply repaid for whatever pains he may have bestowed in acquiring a knowledge of the structure of the human body, for there is not in the whole circle of science any knowledge that brings with it so much gratification to the mind as that of the physiology of the body. While other sciences carry us abroad in search of foreign objects, in this we are engaged at home, and on concerns truly interesting—in inquiring into the means by which we 'live, and move, and have our being.' By such considerations we are most likely to form a just estimate of our own powers and consequence in the creation, and to acquire that difficult and important information, a knowledge of ourselves. But if physiology be thus engaging and instructive to the philosopher, how much more so must it be to a person employed in the practice of medicine, for he knows that it is the only way by which he can arrive at the knowledge of the nature and cure of diseases, since it is evident that the remedy for the disordered functions of the body cannot be perceived unless their natural and healthy functions be previously understood. Physiological researches are the chief means to preserve health, the most valuable of human blessings, and to prevent disease. In truth, then, I think we may say, for all these reasons, with the poet, that

'The proper study of mankind is man.'

Now the third part of the course is *pathological*, in which diseases are treated of; but this subject is too extensive to be considered in general, and therefore I confine myself, as you will see by the proposals, to such diseases as produce an alteration in the structure of bodies. The nature and treatment of injuries, which befal the bones and joints, will be dwelt on. As this subject will be most clearly understood, it will make the strongest impression on the mind, while the form of the bones, and the mechanism of the joints, are before our eyes. The operations of surgery will also be shown on dead bodies. The changes that likewise occur in the uterine regions of females during the period in which propagation is taking place, will also be a subject of inquiry and demonstration. In short, gentlemen, it is the structure, the functions of the body, the state and length of disease under the varying circumstances which take place at different periods of time, that are the subjects on which I pledge myself to instruct you, as far as my ability will permit me." —p. xviii–xx.

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The first six lectures relate chiefly to irritation, inflammation, and fever. They present little of fact or opinion not already known to those who are familiar with the writings of Mr. Hunter, and other standard works. He sets out with this proposition:—

"Local disease, injury, or irritation, may affect the whole system, and induce general disorder—characterized, however, by more especial disturbance of some parts of the system.

Thus, local disease, injury, or irritation, may induce, as its immediate consequence, pain, sickness, swooning, rigors, shivering, convulsions, delirium, or disturbed state of mind, tetanus; or it may occasion various febrile affections. Now, though I think we must consider the first set of symptoms, namely, the nervous ones, as the more immediate effects of local irritation on the system, still it will be most convenient to consider the febrile affections in the first instance. These febrile affections are, some of an inflammatory character, some of a more chronic kind, and some attended with great debility. They are, in short, fevers exactly like those which Dr. Cullen has described under the heads of Synocha, Synochus, and Typhus; and no physician can distinguish them from those which occur without any external local injury. I remember the time when physicians were rather wroth that a surgeon should attempt to describe any fever at all. They were inclined to say, 'What do you know of fever? This is general inflammation which you meet with.' But I will venture to assert, that the fevers produced by local disease are the very identical fevers which physicians meet with where there is no external injury. This is a very curious circumstance, and very illustrative of medical science, as you will find hereafter; but I will not at present dwell upon it, but proceed to the description of these febrile affections. Mr. Hunter, to distinguish and appropriate them as objects of surgery, calls them symptomatic fevers, and he first treats of the symtomatic inflammatory fever."—pp. 6–7.

Thus Mr. A. is of the class who believe, that every fever is the offspring of a local affection, so that he is not remote from Broussais:—to whom, however, he should not be regarded, as indebted for the opinions he sets forth. On this controverted point, it is not our design at present, to say any thing; but we may remark, that however interesting to our curiosity it might be, to know whether every febrile commotion of the heart is the result of a local inflammation, it would not perhaps be of much practical value. We subdue the known internal phlegmasiæ of the nosologists, chiefly by means addressed to the

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system at large; we do the same thing in fevers, and should probably continue to do it, were it even established, that *they* also are but phlegmasiæ.

Mr. A. first proceeds to treat of what he denominates SYMPATHETIC INFLAMMATORY FEVER, on the phenomena of which he presents nothing new. His *ratio symptomatum* is summed up in a single flippant sentence:—

"But, hang it, I need not trouble you with this; the symptoms explain themselves; they are the natural consequences of the excitement of the heart and arteries, and the disturbed state of the digestive organs."—p. 9.

In other places, however, he speaks of the brain and nerves as involved in fever, and even seems to think that they may be first affected, which is undoubtedly the case.

"The treatment," he declares of sympathetic inflammatory fever, the symptomatic fever of authors, "is no treatment." It cannot be cured by art, it is necessary to the process of suppuration in the injured part, and we must cautiously refrain from reducing the powers of the system too low by venesection. "Your only warrant for bleeding," says he, "is that the action of the fever may perchance induce greater debility than the loss of blood." This is undoubtedly true of *those* inflammations which, from the nature of the injury sustained, must necessarily be cured by the secretion of pus, but it is true of them only. May not an inflammation be resolved? And for this purpose what remedy so potent as bloodletting? Every physician must have seen it *cure* inflammatory fever. The other means which our author recommends for the *palliation* of this malady, are acidulated diluents, purges, and antimonials in minute doses, which he administers, like most other practioners, to restore the suspended secretions.

When suppuration takes place, inflammatory fever is succeeded by HECTIC. In his views of the production of this disease, our author follows his usual guide, Mr. Hunter. His observations on its treatment we shall extract:—

"I will go on to speak of what is called the treatment of this fever. It is the necessary consequence of the excitement of the local

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malady, and if you change that, you will change the fever. What are the indications set down? It is said that you should support the strength of the patient. Aye, unquestionably, you must support his strength, for his constitution is getting weaker and weaker, in consequence of the undue action kept up by the irritation of the local disease. And how are you to support his strength? by giving him bark? This used to be the opinion, but I believe bark is less relied upon now; and for my own part I know of no mode of increasing the strength of the patient, but by increasing his powers of digestion. To me it appears that all strength arises from power of digestion, and if bark increases the power of digestion, then give it. You are not, however, to *throw in* the bark, as the phrase has been. There is a paper published in the Medical Transactions, by Doctor Heberden and Sir Everard Home, in which they state that they have never seen the bark do any good in hectic fever, unless it has been accompanied by a wound. There are wounds in which the bark is known to be an effectual remedy for a certain morbid condition of them. The bark should be given with a view of increasing the tone of the stomach, and ought not in general to be relied upon as a remedy. Tonics and cordials cannot be given in inflammatory fever, without augmenting all the symptoms; but in the fever of which I am now speaking, they may be given in moderation with advantage. They are indeed, necessary, on account of the state of the stomach, and may be given without producing any aggravation of the febrile action. The bowels should be kept regular. The management of the stomach and bowels, however, I shall reserve as a separate subject.

With respect to the disturbed state of the nervous system which obtains in this fever, a question arises whether you may give opium to mitigate it. The answer is, Certainly. It will not do in inflammatory fever, but in hectic, where excited action is connected with irritation, opium may be given to lull the irritation, and diminish the susceptibility of the nervous system. If ever you give opium for this purpose, pay attention to the mode of administering it. Nothing is more absurd than to give a night dose of opium, which stupifies the patient and makes him sleep at night, but renders him more miserable and agitated in the day. If opium be given to diminish the susceptibility of the nervous system, in the constitutional affections arising from local disease, it should be administered regularly, in adequate doses, every six or every four hours, so that its effect may be kept up, and no intermission be suffered to take place in its sedative influence. It is necessary, at all times, in giving opium, to attend to the state of the bowels, so that costiveness may not be induced."—pp. 14–15–16.

Our author next treats of SYMPATHETIC IRRITATIVE FEVER, or that which sometimes ensues on severe injuries, in which healthy suppuration is not established, or being established,

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degenerates. In these cases the local and general symptoms are as follow:—

"Still keeping to the subject of compound fracture, I shall now suppose that it has gone on badly; that the wound has discharged very profusely, so that in dressing it in the morning you are obliged to sponge up the matter; that it appears flaccid and flabby; that there are no granulations; and that every thing, in short, indicates a want of energy in the constitution, to repair the mischief. The patient gets weaker and weaker, but still the surgeon cherishes a hope that a favorable change may take place, when on a sudden, the discharge from the wound, which has been so profuse, ceases altogether, or at least very little discharge remains. The wound becomes dry on the surface, and an inflammation is set up about it, which is called erysipelas. I do not think that it should be so called, but, for want of a better name, we will call it erysipelatous inflammation. Corresponding with this change in the local affection, is an equally important change in the state of the constitutional malady. The pulse becomes strong and firm again; there is a burning sensation in the skin, and occasionally considerable perspiration; the urine is again scanty and high coloured; the tongue dry and covered with a brown fur; and there is great excitement in the nervous system, indicated by wandering of the mind, agitation, delirium, picking of the bed clothes, and subsultus tendinum."—pp. 16–17.

Practitioners of medicine in the western states are not unacquainted with this occurrence; but we have no doubt that it is much less common among them, than in the hospitals of London and other great cities. Those who are sent to such charities are too often the victims of intemperance and debauchery, while the new atmosphere which they come to breathe, unites its influence with their acquired predisposition, in producing an irritable state of the system.

"You cannot cure, you can only mitigate the disease. With this view, attention should of course be paid to the regulation of the bowels of the patient. Cordials, and any medicines that will impart strength to the patient, should be given. Opium should also be administered, to lull the general irritation, and mitigate the severity of the excitement which the local malady imparts to the system."—p. 17.

Of amputation in such a case, Mr. A. does not speak in definitive language; but it may be inferred, as the result of his experience, that the fever often continues after amputa-

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tion, and that, when that operation is employed, it should be at an early period of the irritative inflammation.

In his second lecture, our author resumes the subject of constitutional irritations from local injuries, and treats particularly of the pain, the sudden debility amounting even to syncope, and other affections of the nervous system, which he justly regards as the tissue on which the various sympathies depend. When, however, in imitation of Mr. Hunter, he speaks of the stomach as the centre of sympathy, his opinion is more questionable. Indeed we confess it to be a language that we do not fully understand. Sympathy is morbid association. Now it is not the stomach, but the brain and the spinal marrow, as Whytt long ago taught us, that, by means of the nerves which re-unite in them, associate the organs together. The stomach, it is true, suffers greatly in most local irritations; but the other organs suffer likewise, in proportion to their exalted sensibilities and the functions which they perform. The whole system is *directly* injured by the topical malady, and not indirectly through the disorder of the stomach. The various organs are, in short, fellow sufferers, under the pressure of a diseased part and not of each other, or any one of the sympathizing viscera. For the syncope, or rather the tendency to it, which often takes place from a local irritation, as for example, the introduction of a bougie, the extraction of a tooth, or a slight wound, Mr. A. strongly advises the patient to be placed in a horizontal posture, and this is sound practice; but what does it prove? why clearly that the heart, connected with the irritated part by the nervous system, has suddenly become so enfeebled, as not adequately to inject the brain with blood; in consequence of which, that organ ceases to send out adequate supplies of cerebral or nervous influence, and all the functions, both animal and organic, fall into debility and disorder. Give to the heart the *hydraulic* advantage over the brain, which results from a change to the horizontal position, and diminish the expenditure of nervous power upon the muscular system, and the syncope is effectually prevented. But the stomach cannot be affected directly by change of position; and if its sym-

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pathetic affection was the cause of the impending syncope, a horizontal position could not prevent it from taking place. It signifies nothing in the argument, that a glass of whiskey and water, or a dose of hartshorn, will sometimes prevent fainting. It acts first upon the stomach, it is true, but its beneficial effects arise from the excitement which it imparts to the heart and brain. A volatile to the olfactory nerves, or cold water to the surface of the body, will often afford still prompter relief; and it is wholly gratuitous to assert that these exert their influence on the stomach. They first affect the brain, and through it the heart, the stomach, and the other organs of nutritive life, as well as animal life.

To the principle which we are discussing, our author refers traumatic TETANUS. We pass over his brief remarks on the causes and symptoms of this formidable malady, as presenting nothing new, to lay before our readers a condensed view of his experience in its treatment. With sound judgment, as a public lecturer, he generally omits all historical details, but in this instance he comes down from Hippocrates. However, Dr. Haen, Dr. Wright of Jamaica, Dr. Currie, of Liverpool, and our distinguished countryman Dr. Rush, make up the catalogue of his authorites. The Father of Physic in his opinion, comprehended all that is at present known concerning this disease. He advised the cold affusion which has sometimes succeeded and often failed. It is, in our author's opinion, like the other preservatives for this desperate accident, an empyrical practice. He knows of no specific for tetanus. The cold affusion is directed against a particular symptom; it has been tried upon horses at the Veterinary College, but gave only partial relief. He places more reliance on purgatives, and prefers calomel and jalap to salts. It is in general, necessary to repeat them for days, before free secretion takes place from the bowels, which is often productive of great relief. Mean while the sufferings of the patient should be mitigated with opium; which should be given at stated periods, both day and night, in large doses. It should not be suffered to accumulate in the stomach, and therefore cathartics are never to be omitted. That this sometimes

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happens is proved by a case, in which after the constant administration of a scruple by day and half a drachm by night, no less than 30 drs. were found undissolved in the patient's stomach after death.

"With respect to local treatment, suppose a man has his fingers crushed, and tetanus suddenly comes on, what is to be done? Should the finger be amputated? I see no objection to this, if the injury is such that the finger is not likely to be of any use. But will the amputation stop the tetanus? No; I think I have seen cases where it has been mitigated by amputation, but notwithstanding this mitigation the patients have died of tetanus. I would not, therefore, take off any material part of a man's body with a view of relieving tetanus."—p. 31.

To the wound, our author condemns the application of caustic and other irritants; and advises soothing applications.

At the conclusion of his lecture he informs us, that "when the irritable and sloughing state of the wound shall have gone off, when healthy granulations have formed, and a cicatrix is rapidly advancing, tetanus *may* occur." In reference to this occurrence, he proposes to the profession this question,—"*Whether the disordered state of the digestive organs, established during the irritative state of the wound, may not be the occasion of tetanus when that irritative state has ceased?*" We are not prepared to reply in the affirmative. The stomach and bowels with the other parts of the system are extremely torpid in this malady, and so they often are when no tetanus is present; something else than intestinal torpor is necessary, therefore, to its production. Our author makes no reference to the discovery of an inflamed state of the theca vertebralis, and the spinal extremities of the nerves, in some of those who have died of this malady. Such a condition offers at once a plausible explanation of the spasms and the constipation; if, indeed, the latter is not in a great degree the effect of the former, extending to the abdominal and pelvic muscles, the action of which is perhaps essential to fæcal evacuation. The same pathology will enable us to understand how it is, that in this disease the patient, to use the language of our author, is "tranquil in his mind and has his senses about him." Of

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cupping along the spine, a practice suggested by the theory of spinal inflammation, and which it appears has been found beneficial, Mr. A. says nothing.

In concluding this summary, which presents so little on which to rely in the cure of tetanus, we are happy to be able to state, that from some cause or causes which we do not pretend to know, it is comparatively a rare disease in the Western country. During a residence of twenty-eight years in this city, we have seen but two cases, both of which proved fatal.

Lecture third is on the influence of morbid states of the digestive organs, in producing or aggravating local diseases. Of course it involves the doctrines with which our author favoured the profession some years since, in the celebrated treatise of which we took occasion to say a few words at the beginning of this review; and we shall not, therefore, trouble our readers with a digest of that which we trust they have already studied attentively. The lecture of course embraces many exhortations to temperance, in the course of which the example of Cornaro is held up for universal imitation. We beg leave, however, to question the soundness of that philosophy, which draws a conclusion so general from a single fact. That Cornaro acquired health and comfort and long life, by changing his habits from gluttony and drinking, to rigid temperance, may be admitted; but that all men would enjoy better health and more lengthened years, by living on short allowance, is what we shall take the liberty of doubting. Many kill themselves, we grant, by gormandizing,—none, perhaps, by abstinence, except madmen, for nature prompts us in the right way. But a substantial diet is not a gluttonous diet; nor can men be made temperate in their indulgences, by declamation in praise of abstinence. The truth is, that in civilized life, where we have a great variety of functions to perform, a varied excitement of the system must be sustained, and this is to be kept up, in a great degree, by a generous diet. Mr. A. himself acknowledges that he has been a great sinner against his own rules; and still with a full stomach, he has reached the fulness of years, and a fulnesss of honors, which

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he would not exchange with any brother of the British metropolis. Moreover, the temperament is to be taken into account, and this presents great diversity. No general law, therefore, will bear equally on all. The sanguine and the sanguineo-bilious, may do well under rigid abstemiousness; but the phlegmatic, and they are not a few, require a liberal and stimulating diet to sustain them in activity. Dyspepsia is the penalty which our dietetic law givers attach to free living; but of this, again, we have our doubts, or rather our disbelief. At the risk of being denounced as *gourmands*, and consigned to the ranks of the heterodox in medicine, we must say, that we have seldom been able to trace up a case of dyspepsia, to excess in the *quantity* of food; and, still more, we have not been able to accomplish in its treatment, as much good by abstinence as the fashionable works of the day would lead us to expect. The bowels, in many cases of dyspepsia, require the stimulus of a considerable amount of recremental matter, and when it is withheld, they fall into greater torpor, which reacts upon the stomach. We recollect a case in point. A gentleman about 30 years of age, of the most temperate habits, had been several years dyspeptic; and the disease at length arrived at an alarming degree of violence. He took little medicine, but varied and abridged his diet in the most *exemplary* manner. For months he eat rice like a Hindoo, then drank milk as if the pastoral ages had revived, lastly took meat as if Dr. Rollo had been treating him for diabetes. But, *mirabile dictu*, in the midst of all these observances, his constipation, acidity, and emaciation remained—nay rather increased. He at length determined on a course of generous living, consisting of corn bread, bacon, beef, poultry, vegetables,—in short, the fatness of this fertile land, with a glass of whiskey and water at dinner, and very soon acquired a most comfortable *en bon point*. Twelve or fourteen years have since elapsed, and he has experienced as little of the disease, as most of his associates. Now here is a case to be put opposite to that of Cornaro. Temperate ourselves, however, we are far from intending to appear as the advocates of intemperance; and cheerfully raise our own humble testimony against attempting

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to cure diseases, while the patient indulges himself in a full diet or in the use of indigestibles.

The subject of the next two lectures is inflammation, and here of course our author is strictly Hunterian. The inflamed part is in a state of increased action:—It contains more blood, generates more heat, and possesses higher sensibilities. "There is a disposition in the vessels of an inflamed part to receive a greater quantity of blood than natural;" but on what this disposition depends Mr. A. does not know. The larger arteries leading to an inflamed part, as well as the capillaries, are unusually distended. The part itself is hard upon pressure, and cannot by that means be emptied of blood; which Mr. A. thinks indicates some kind of obstruction in the minute vessels, else the fluid would pass into the veins. The cause of obstruction he supposes with Dr. Cullen, to be spasm. But we suspect that in general more blood returns from a part actively inflamed, than in health. Inflamed arteries when cut, spout out blood to a greater distance than in the uninflamed state, which Mr. A. justly attributes to the vessels themselves, and not the heart, seeing that it must act on the vessels alike. The following practical remarks deserve to be remembered:—

"Here I shall call upon you to attend to a circumstance which you will frequently have to consider in practice, the hæmorrhage from diseased arteries. A patient has a diseased knee. The surgeon finds that nothing more can be done, that it *has* become a source of irritation to the constitution, and he advises the patient to have it removed. He is, perhaps, at the time, a little easier than usual, and he puts the operation off. He has a fresh attack of pain, and he asks the surgeon to remove it. It is done, and instead of having to secure two or three vessels, you find about twenty little vessels which bleed profusely, and perhaps requiring as many ligatures. The patient is put to bed, but the surgeon is called up in the night to stop the hœmorrhage, which has again returned, and this may happen repeatedly. This was the practice formerly, but not now, because we always amputate beyond the inflamed part."—pp. 49–50.

As to the treatment of phlegmonous inflammation, all that is necessary is to apply wet rags to the part, and then it will

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terminate in resolution! The great point is to carry off the superabundant heat by evaporation; but we must be careful not to reduce the temperature of the part below the natural standard. Much mischief has been done by inattention to this rule. A poultice not greased with lard, fulfils the same intention, but should not be applied cold. The *bread and water* poultice is best, and according to Mr. A. should be prepared in the following manner:—

"Put half a pint of hot water into a pint basin, add to this as much of the crumb of bread as the water will cover, then place a plate over the basin, and let it remain about ten minutes, stir the bread about in the water, or, if necessary, chop it a little with the edge of a knife, and drain off the water, by holding the knife on the top of the basin, but do not press the bread, as is usually done. Then take it out lightly, and spread it about one third of an inch thick on some soft linen, and lay it upon the part. If the part to which it is to be applied should be a wound, you may place a bit of lint dipped in oil beneath the poultice. It is very comfortable and soothing to the part. It is like a bath of tepid warm water—it produces a perspiration on the part to which it is applied. I do not know a better application. If there should be a surplus of heat in the part, you may expose the poultice, and allow the evaporation to go on a little. The poultice may be made with poppy water, if you think sedatives are necessary. It may be made also with the hemlock juice, if recently expressed, and it is a very good application to irritable sores. So also you may take a carrot poultice, but it should not be made with the great coarse substance of that vegetable. You should use the recent juice. This poultice admits of medication, but there is nothing better that I know of than the bread poultice for broken surfaces."—pp. 53–54.

If a phlegmonous inflammation is not resolved, it hurries on, with increasing violence, to a second stage—*suppuration*. The vessels in the central part of the tumour, where the inflammation is most intense, at first secrete serum—afterwards pus; while those of the circumference, pour out coagulable lymph, which cements the cellular texture; and forms a cyst. The result is an abscess, which, by an ultimate law of the animal economy, points to the surface, and when all the superincumbent parts, except the cuticle, are absorbed, that inorganic membrane is ruptured, and the pus escapes; and may be known by its containing *globules*.

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"After the vessels have continued to secrete pus for a few days, the inflammation in the part, if properly treated, becomes less, and there is a gelatinous fluid poured out; into this jelly new vessels shoot, and cause little projections in the abscess; from these little projections other vessels shoot, for they soon become very vascular, and are covered with a puriform fluid. These *granulations* continue to increase, and may be seen occasionally even protruding beyond the level of the aperture. The disease has subsided, the cavity of the abscess is completely filled up, and this appears to be Nature's cure and her mode of cure."—p. 62.

The treatment of a phlegmon tending to suppuration, is with a "*greasy* poultice;" and having extracted Mr. A's recipe for making one without "*grease*," we shall transcribe his directions for the other.

"Scald your basin, by pouring a little hot water into it, then put a small quantity of finely ground linseed meal into the basin, pour a little hot water on it, and stir it round briskly until you have well incorporated them, add a little more meal and a little more water, then stir it again. Do not let any lumps remain in the basin, but stir the poultice well, and do not be sparing of your trouble. If properly made, it is so well worked together that you might throw it up to the ceiling, and it would come down again without falling in pieces; it is in fact, like a pancake. What you do next, is to take as much of it out of the basin as you may require, lay it on a piece of soft linen, let it be about a quarter of an inch thick, and so wide that it may cover the whole of the inflamed part. Then take a bit of hog's lard on the tip of your knife, and put it in the centre of your poultice, and when it begins to melt, draw the edge of the knife lightly over the surface of the poultice, and you will spread the grease over it. It is now ready to be applied, and it is what I call a *greasy* poultice. Oh! it is one of the best applications which can be made to an inflamed and irritable part, provided the linseed meal with which it is made is sufficiently fine. But I never see any such thing now as good fine linseed meal; it is all pressed into oil cake and given to cattle to fatten them.

It is, when made in this way, oh! it is beautifully smooth. It is delightfully soft. It is warm and comfortable to the feelings of the patient, and it is the best application that can be made to an inflamed part, as I have before said. The reason why I have lately preferred bread in the composition of the poultice, is, because I cannot get the linseed meal in a sufficiently fine powder. So much for the greasy poultice. You may laugh if you please, but it is a very good poultice, and the manner of making it cannot be too generally known."—pp. 64–65.

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But phlegmonic inflammation may be so severe as to destroy the vitality of the part, and occasion the coagulation of the blood in the vessels. Mortification then takes place, and how is it to be treated?

"Oh! by soothing, soothing, nothing but soothing. It is excess of action which causes the parts to perish, and therefore you must soothe them. You do not make your applications with the view of acting on the dead parts, but on the living. You must remember, that whilst the inflammatory action is so severe in the centre of an inflamed part, as to cause its vitality to be destroyed, that the neighbouring parts are still very much inflamed, and perhaps going into a suppurative process, and further from these parts the inflammation is still less severe. So that you see there are various degrees of inflammation in the parts, as they recede from the central part of the swelling. The best thing you can do, is, to apply a poultice over such a part, and attend to the regulation of the temperature of the surrounding parts, in the manner which I have before pointed out."—p. 66.

At the close of the fifth lecture, we are introduced to the subject of Chronic Inflammation,—a morbid condition of deep interest to surgeons. Chronic inflammation differs from acute, both in its symptoms and effects. It is attended with little heat or pain; the arteries leading to the part, may be enlarged, but are not affected with the convulsive action produced by acute inflammation; nor are the violent febrile commotions of the general system, which the acute phlegmasiæ awaken, experienced by the patient. The disease is indolent, and in reference to the constitution insidious and undermining. To chronic inflammation we should, according to Mr. Abernethy, attribute most of the deplorable changes of structure to which our organs are liable. A morbid action is set up, coagulable lymph slowly secreted from the blood of the inflamed vessels, into the cellular tissue, through this *nidus* new vessels shoot, the part increases in size, the natural structure is deranged, and its functions perverted. If the effusion of coagulable lymph is diffused, the proportion of new structure to the old, in any given space will in general be less, than when the secreted lymph is aggregated at a single spot. The new structure will then greatly predominate, and may even

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constitute the whole of the tumor; which can be detached from the normal structure, by an operation, and leave the organ from which it had sprouted out, unembarrassed. These new growths, although the offspring of a morbid action, possess an organization of their own, which may not be consistent with that of the body, or co-operative in the functions of life, but may nevertheless be so far from disturbing those functions, that the individual may continue to enjoy good health for an indefinite period of time. In other cases the sensibilities and secretions of the parasitic offspring, may react upon the surrounding parts and the system at large, in such manner as to excite general disease. On the other hand, the new structures are under the influence of the constitution; and especially, in Mr. Abernethy's opinion, of the digestive organs, the disturbances of which, not unfrequently accelerate their growth or aggravate the character of the morbid action which gave them birth. But independently of constitutional influences, they are liable to pass from bad to worse, in consequence of their own vicious temperaments or of accidental causes, acting upon them. Hence they sometimes slough off, but oftener suppurate, and the pus which they generate is vitiated and poisonous to the contiguous parts.

That the term inflammation is applicable to all the cases of morbid growth and derangement of structure, which occur in the living body, may be doubted; unless we attach to that word, other ideas than those embraced in our ordinary definitions. Many of them present none of the usual characters of inflammation, and some appear to be mere *hypertrophiæ*. Mr. A. however, regards them all as the products of chronic inflammation, and under this head proceeds in his seventh, eighth, and ninth lectures, to class and describe the various kinds of tumours—sarcomatous, encysted and purulent. As this classification has been for several years before the profession, we shall make no analysis of these lectures; but dismiss the subject with an abstract of his treatment of the inflammation, which generates them.

In the management of all tumors, it is of the greatest importance to protect them from every external irritation. They

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must never be subjected to great extremes of temperature, and above all, should not be rubbed or handled by the patients themselves, as is too often done. Mr. A. has known many tumors disappear from no other cause than a cessation of this practice.

It is equally important, to preserve them from the morbid effects of internal irritations; and hence the necessity, in many cases, of correcting disorders of the digestive functions, without which every topical application will prove unavailing. Of such applications, those which reduce the temperature of the part, are often more efficient than all others; but it is only the *excess* of heat that should be carried off, and we are always to avoid reducing it too low.

Local bloodletting, by means of leeches, is frequently of service; but on the whole does less good than in active inflammation. "Put on a few leeches once or twice a week, never more than six or eight at one time."

"By soothing applications," says our distinguished author, "chronic swellings may remain stationary for many months, and even years; but still there is swelling, and the object is to get rid of it by causing the absorbents to take up what has been effused." For this purpose various plans of stimulating treatment have been proposed. As an indispensable preparation for the whole of them, "all increase of morbid actions should have completely subsided," before they are adopted. So says our author. But we humbly conceive that his ideas in this respect are carried too far. An inflammation cannot always be reduced; it must sometimes be set aside by raising in the part a new action; and hence we may at the same time, in many cases, supersede a lingering morbid action and excite the function of the absorbents, by the same application. Among the means which Mr. A. advises for promoting the absorption of tumours, are frictions with the hand, bandages, stimulating liniments, electricity, blisters, tartar emetic ointment, a vinegar poultice, and issues. On the subject of electricity he has the following remarks:—

"*Electricity.*—This is a part of surgical practice which may be considered as a *unique*. All the other means which I have before

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mentioned, operate on the surface; but electricity will pervade the very centre of the body. It may be so managed as to be made to pervade a tumor even in the abdomen. It is a species of stimulation, and may be applied in various degrees of force. Much disputation has been raised as to the manner in which electricity operates on the nervous energy; but I shall speak of it here as a stimulant operating on a local disease. Now, with regard to its application, you must modify it according to the tenderness of the part. If you stimulate the part too much you will produce inflammation, and the tumor will increase. Now, electrify one swelling, and the swelling subsides; electrify another, and it will increase. What can we think of it? and think we must. Why we must consider that it acts as a stimulant, and increases the action of a part; that if the swelling is disposed to disperse, it disperses; and if disposed to suppurate, it goes on to suppuration. You should begin with very small charges of electricity. You would like the patient to feel it a little. Let it be managed so as to produce a feeling of warmth and tingling in the part, and let that feeling subside, if you saw that it did not increase the action too much; then touch it up again, and you might increase the force of the charge. I have frequently heard people say, if you speak to them on the subject of electricity, 'Oh! I do not think it ever does any good, I have given it a very fair trial, I was electrified every other day for two months.' All this is very possible, and they might have been electrified for two years, without any benefit, unless there be some precise mode adopted for its employment, and the effect which it produces be regarded. Now this is the worst thing that can ever be done. It is this practising without intellect that constitutes empiricism. It is blindly adopting, in this way, a power without a principle to guide it, that I abhor above all things." —pp. 74–75.

When we blister, it is not necessary to "apply a plaster a foot square, in order to derive advantage from it." Blister but a small part of the surface at once; it will then be of great benefit.

Of issues, which our experienced author prefers to setons, he speaks in terms of commendation which we shall extract:

"*Issues*—I hold to be the most lenient, and the most effective counter-irritant; and when I have to keep up this counter-irritation for a long time, I generally make an issue. What I say is, let me have a chronic remedy for a chronic disease. You may make a sore upon the skin with a hot iron if you like, and they say that it is the most lenient way, if it be hot enough; and a good deal has been said in its commendation. But there is something so formidable in this mode of producing an ulcer, that it would completely terrify

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some persons. I do not like it, and I never did like it. Now, if I had to make a sore upon the skin, with the intention of keeping that sore open as an issue, I should make it with a caustic, but not such a caustic as would spread all round the place on which it was originally applied, and produce a sore twice as large as I intended. This would be just as bad as the hot iron, in my opinion. Now I like the old caustic best; that is, the caustic made with the potash and quick lime, for with it you may destroy just as much of the skin as you like, and no more. This caustic might be applied with so much precision, that I would engage to sketch out upon the skin any fantastical figure that you would tell me; aye, even if it were such a one as George and the Dragon. The way in which this is to be applied, is the following:—You take a piece of adhesive plaster, and cut a hole in it of the size that you wish the caustic to be applied. You put this on the skin, and over it put another piece of plaster of the same shape. You go on putting one piece over the other, until you have formed a cavity in the centre to hold the caustic. You then take a piece of the caustic I have last mentioned, wet it a little, put it into the hollow on the skin, and over it put another piece of plaster. The patient says, 'Oh! dear, how nice and cold it feels!' You let it remain there about four hours and a half, or five hours, and before that time he finds out that it is not quite so comfortable. You take it off, and you find that there is a good eschar produced. The skin is not a black eschar, like what it is after applying the other caustic, but nearly of the natural appearance. This comes away in a very few days, and you have a wound produced of exactly the dimensions you intended. If you wish it to discharge much, you may dress it with some stimulating application. Peas are commonly used for this purpose, but I considered that there was great inconvenience attending the daily changing of the peas, and was induced to substitute some glass beads. The wound can only heal from the edges, and if you place any foreign body there, you prevent the process of cicatrization as entirely as if you were to cover the whole surface of the wound. What I have recommended, is a string of small glass beads to be placed round the margin of the circular sore, which become in a few days buried in the granulations, and give no further trouble. Mr. Brodie has said, that the best plan is to touch the sore over, when necessary, with a little pure potash."—pp. 77–78.

The 10th lecture opens with some brief remarks on IRRITATIVE INFLAMMATION, by which our author means that which attacks surfaces and is prone to terminate in *mortification*. It is sometimes *located*, to use a phrase of the Backwoods, in the absorbent glands. It often intermits. Not limited to the skin, it is frequently established in the walls of abscesses, and in the surfaces of wounds and ulcers. In every case it is attended

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with constitutional irritation, and a fever of the irritative kind. This inflammation has been called erysipelatous, but Mr. A. doubts the propriety of the denomination; and dismissing the subject without favouring us with his *methodus medendi*, he proceeds to speak of the latter affection.

Erysipelas is a cutaneous "travelling inflammation." It generally spreads by continuity of surface, but sometimes leaves one spot and appears on another. Not unfrequently, it suddenly disappears from the surface, especially under the influence of certain applications, and the heart or brain or some other vital organ, becomes seriously, even fatally, affected; but according to the observations of Mr. A. it is not erysipelatous. Their structure does not admit of that inflammation, and what their pathological condition is, he does not know. Erysipelas is not apt to terminate in mortification, like irritative inflammation: whether it ever suppurates, our author is not prepared to say. Every physician, however, must have met with cases in which this inflammation was connected with suppurative inflammation, in the subjacent cellular tissue. Erysipelas may come on from constitutional causes, or from local injuries. Mr. Abernethy's pathology and treatment of the former variety, is summed up in the following paragraph:—

"The occurrence of erysipelas shows something very wrong about a man's health. Let something be applied to provoke a part a little, let there be an increased action produced, and in a healthy man you will have a phlegmon; you will have none of this sneaking inflammation, which I am now telling you about. The general health was disturbed before the functions of the digestive organs were disordered. The person has nausea, and loss of appetite, and the actions of the different parts are not healthy;—and that settles it. It is produced by the state of the general health, and it acts upon the general health. I should put a little bread and water poultice on the part, and try to soothe the disturbance which has been produced."—p. 121.

For the production of surgical erysipelas, a wound alone is not sufficient; there must be disorder of the digestive organs. This opinion is clearly expressed by our author in a single eloquent sentence:—

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"I'll be hanged if erysipelas is not always the result of a disordered state of the digestive organs. I never see it come on if the digestive organs be right, and it goes away as soon as they are right." —p. 122.

In the management of these cases, half a grain of calomel and five grains of jalap may be given every four hours. Cold or repellent applications are to be avoided. Of blisters, mercurial ointment, and other strong measures, Mr. A. says nothing.

The lecture concludes with a pathological notice of the FURUNCULUS or boil; and the 11th begins with a short account of the CARBUNCLE, which Mr. A. thinks generally arises from some disorder in the digestive organs. Let him speak for himself:—

"I have no doubt that the cause of the complaint is a disordered state of the digestive organs, and of the mode of treating that disorder I have already spoken. If I could set all the digestive organs to rights; if, I say, I could set this disorder to rights, egad! I should do better than if I discovered a philosopher's stone, and had the knowledge of the art of prolonging life."—p. 129.

Carbuncles should be opened with a free incision, by a double edged knife.

The ANTHRAX Mr. A. believes also arises from digestive derangement, and advises it to be treated in the same way with the carbuncle.

MORTIFICATION comes next into notice. "It is the want of life in a part." "It is a vital process." "It is the last act of life." We do not, however, perceive very clearly, how the want of life can be an act of life! A great variety of causes may induce this state; and it, therefore, requires a variety in its treatment. For the mortification from cold, cold applications are necessary. The transition to a higher temperature must be gradual. When the disease arises from weakness, it is generally associated with disease of the digestive organs and an irritable state of the whole system. If it arises from excess of action, we must not stimulate, generally or topically, but apply a bread poultice.

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"The forms of disease which I have been mentioning this evening, may be traced to that state of health, which, in the early part of these Lectures, I mentioned as being the fruitful parent of a very numerous and dissimilar progeny of local diseases; a state of health produced through the reciprocal action of the digestive organs on the nervous system, and the nervous system on the digestive organs." —p. 137.

The mortification of the toes and feet in old people, is generally dependent on an ossification of the small arteries:—

"In the treatment of mortification of the toes, it is wrong to apply stimulating applications. What I usually give as a medicine in these cases, is the camphor mixture, with a little volatile alkali; or, if you please, you may give a little cardaic confection. Mr. Pott has written about the advantage of opium in this affection. If you find that there should be much pain, then opium will give great relief, but unless there should be much pain, I do not see what advantage is to be gained by it. There are many instances of mortification having taken place without any pain being felt."—p. 138.

Such in substance are Mr. A's views of the nature and treatment of mortification. They are certainly not as full as might have been expected; but we pass on to the next lecture.

The first topic of this lecture is Œdema, which our author thinks is owing to increased anterial action, oftener than to diminished absorption. In Elephantiasis there is a deposition of gelatinous matter. Of the treatment of Œdema:—

"As it is probable that in general there is an increased deposition, we must try to check it, and to cause absorption. Upon my life, I know of nothing better than bandaging and gentle friction, and attention to the general health. Pressure promotes absorbtion, it supports the weak vessels."—p. 140.

This leads our author to speak at large on the subject of absorption, a process to which he attributes the progress through the body, of pins, needles, &c. when they happen to be swallowed:—

"A gentleman, who was a student here, sent me a case of that kind, in which, by some accident, for I may say it was a mere accident, the woman knew how many pins she put into her mouth. I forget now exactly the number, but it was between forty and sixty. They all came out in about six months, from different parts of the

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body, shoulder, breast, belly, legs, arms, and back. During the whole of this time, she had most horrible nervous irritation. At last they were all discharged and she got very well."—pp. 141–142.

But the passage of foreign substances through the body, is not always attended with nervous irritation.

Interstitial absorption leads to the formation of ULCERS; maladies of such frequent occurrence, that we shall present in a long extract the remarks of our author on their treatment:—

"*Treatment of Ulcers.*—First, of the treatment of *common ulcers*, ulcers in which there is no morbid propensities. I have told you as much as I know as to the principle on which all ulcers should be treated. The irritable sore must be soothed, and the indolent sore excited.

There is nothing that can be applied to a sore, when in a quiet state, so good as Baynton's bandage. First, you appease the part, then you apply a slight stimulus, such as the sore may tolerate without resentment, without exciting an inflammatory action; and this is what I call the surgery of *susceptible surfaces*. You diminish sensibility by exciting the part to a certain degree, short of that which produces reaction. Now I never can explain my meaning half so well as by referring you to a fact of which you must be peculiarly conscious; I refer to an inflamed eye. What is necessary to be attended to in the case of an inflamed eye, is necessary to be observed in the manner of applying Baynton's bandage, if you expect it to be attended with success.

Well, what do you do when a man's eye is inflamed? You tell him to apply leeches, to use cold washes, or the solution of opium, to take aperient medicine, and so on; you do every thing, in fact, to quiet and tranquilize the part, to allay the inflammatory action, and when you have succeeded in doing this, you adopt a different plan. You tell him to use an eyewater, and you give him a weak solution of the sulphate of zinc, say one grain to the ounce, and you tell him to use it frequently, to use it every six hours, to apply it by the means of the eye-cup or by putting a little of it into the eye. The first time he applies it, he puts his finger to the eye and rubs it, for he finds that it smarts uncommonly; he probably turns about, stamps on the floor, raves from the violence of the pain, and is almost disposed to damn the doctor who puts him to this, as he imagines, unnecessary pain. The pain, however, soon goes away, and he is induced, from his eye still continuing weak, to use it again. He does so, and finds that it smarts much less than it did the first time; he tries it again, and finds that it smarts still less. He says to himself, 'Hang it, did not the doctor tell me to use it every six hours? I will try it again.' And so he goes on till he finds it makes no more impression on his eye than water by itself.

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The strength of the collyrium is increased, he uses it without producing any serious inconvenience, and the eye is cured. Now, I ask you, if this does not show a morbid susceptibility of the surface to which the stuff is applied, and this morbid susceptibility is removed by the application of a stimulus not sufficient to produce reaction or any sort of inflammatory process.

There is a great necessity for applying stimulants to sores, but the time for using them must be regulated by the condition of the sore. If you apply a stimulant after you have excited the irritability of a sore, granulations are formed, which continue to grow; but if you increase your stimulants the granulations will slough. But while the sore is indolent it will bear the application of a stimulant. Now, as to the manner in which Baynton's sticking plaster bandage should be applied, and the good effects which it is capable of producing, they are both parts worthy of attention. It is ridiculous to suppose that there was any peculiar benenfit to be derived from its being applied by any particular individual, for what can be done by one can also be done by another.

It is a bandage made of straps of adhesive plaster put carefully round the limb, having the sore first protected by a little lint dipped in a solution of opium, or by a bit of lint having a little spermaceti salve spread on it. The straps of plaster are put round the lower part of the limb first, and then made gradually to come upwards. Over the whole you may pass a light roller. Great attention is necessary as to the manner in which it should be applied, and I wish to call the attention of the dressers of this hospital particularly to this subject, for unless it is done well, it cannot produce those marvellous effects of which it is capable. I recollect the case of a clergyman which very well illustrates its utility. He called on me and said, that he entertained a great respect for me, and wished very much for my opinion respecting his leg. He showed me his leg, and there were two sores on it, which he said had been very intractable, and that he had for many months felt great inconvenience and pain from their continuance. I said, 'Oh! if they are dressed properly, they will be well in a fornight.' 'A fortnight! surely, sir, you are in jest, I have been under the management of some of the most eminent surgeons in London for many months, and now you say I may be well in a fortnight!' He appeared very much hurt at what I had said to him. 'Nay, sir,' said I, 'you need not be wroth at what I told you. I saw that you were exceedingly anxious, that your mind was in an irritable state, and I said it to pacify and tranquilize you, and I again repeat, that if your leg be properly dressed, it will be well in a fortnight.' He said that if that were the case, although he had very important business to take him out of town, he would remain for that time at least. I ordered him merely a dose or two of blue pill, and a little aperient medicine, applied Baynton's bandage, advised him to keep at home and raise the leg in a horizontal position. And before the fortnight was over, aye, even before five days were over, his leg was quite well.

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I remember also the case of a young lady, who had a bad ancle. It was near Christmas time, and she wished very much to join in a dance with her other sisters, who were to go to a ball in a week. I said that a week was a short time to heal a sore in, but, however, we should try what could be done. I put on the bandage I have just been speaking of, and she went to the ball at the end of the time I have mentioned, and danced without any inconvenience.

It appears to me that Mr. Baynton did not, at first, exactly understand the principles on which this bandage of his was to act. He imagined that the benefit was obtained by its approximating the edges of the sores. But I think it acts differently. It acts by giving a moderate and equable support to the newly formed vessels of the sores, and supplies the deficiency of the proper natural coverings. I remember a man in this hospital who had a large ulcer on his leg. He could not even put his foot out of bed without producing most excruciating pain. He had the bandage applied, and was desired to stand up by the side of his bed. He did so without making any complaint. The vessels of the leg had received the support which their weakened state required, and therefore were not overdistended as before.

Then again, if it should be necessary to lessen the temperature of the limb, you can do this very easily by wetting the bandage with water, and allowing it to evaporate. Mr. Baynton was aware of this, and he recommended the patients, when the heat of the limb became high, to sprinkle water over the bandages, and to do this there is nothing better than a watering pot. The bandage retains as much of the fluid as is necessary for the process of evaporation to take place. It is a very useful, and, generally, a successful method of treating sore legs.

But to return to the various methods which have been proposed, and the various stimulants which have been recommended for the treatment of ulcers. It is impossible to describe all the appearances which present themselves in the progress of ulcers, or to detail to you the stimulants that are applicable to particular cases. The practice in these respects is rather empirical, for we are guided principally by experience. Descriptions cannot convey to you correct ideas on these points; you must see them to understand them.

I said there were various methods of stimulation practised, and sometimes with very good effect, but I am satisfied that I have seen ulcers get well simply by attending to the constitutional treatment. A man in the hospital had a large sore on his leg for a very long time. It would improve under a new stimulant for a short time, and then require another. I said one day, when going round the house, 'I wish you would dress this man's leg with a little simple ointment, merely attend to the state of his digestive organs, and give him a little sarsaparilla.' They did so, and he got speedily well.

I have said that if a man would give me a Pharmacopœia, I would undertake to say that there should not be one thing contained in it,

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which, sooner or later, I have not seen applied as dressings to sores. All the substances which it contains may be ranked under particular classes, and their application to ulcers may at one time or another be useful.

There are substances which may be regarded as stimulants—the different preparations of the metals, of mercury, zinc, copper, and so on. The mineral acids may be ranked under this head, and they certainly, when diluted, are very useful applications, as the nitric or muriatic acids. I once took it into my head to try the effect of bathing the limb in an acid, where there was a diseased bone. I put some nitric acid into a tub of water, and told the man to soak his leg for a quarter of an hour in it, for the purpose of dissolving the earthly matter of the bone, but I found it produced a great deal of inflammation, and I was obliged to give it up. Then again, there are substances which may be called tonics. These, when applied to sores, often produce good effects; such as the astringent vegetable barks, and so on; other substances which may be called cordials, as the different balsams; the gum Benjamin, the solution of it, called Turlington's drops, and to some indolent sores it is a very good application. Other things act as sedatives or narcotics, and you know there is a very large variety of substances that act in this way. There are opium, hemlock, and belladonna, and so on. As to the latter substance, I once had a case in this hospital where the sore had been very irritable and obstinate for a long time, and we had tried almost every application without any benefit, when I recommended him to use an ointment, in which some belladona had been rubbed down. He did so, and passed a very quiet night; he was quite delighted when I saw him in the morning. Well, I thought this was a very good application, but just as I was going away from his bed, he said 'Do you know, sir, that I had a very odd thing happened to me this morning? I was dizzy, and could not see any thing for an hour.' 'Oh! were you?' said I. But, egad, I did not think then it was a very good application, and I ordered him to leave it off immediately.

Having now described those ulcers, which may be called simple, from their not having any morbid peculiarity, such as the indolent ulcers, which Sir Everard Home has described, and which he says bark will cure; such as the irritable ulcer, for which he recommends mercurial ointment; there are other ulcers, he says, which a solution of common sea salt will cure—these I take it for granted are the scrofulous ulcers—I shall next speak of ulcers which are characterized by having some *morbid peculiarity*.

The cancerous ulcer is of this description. It is an ulceration attended with violent pain, the discharge from which is horribly fetid, and it is a very intractable disease. Different applications have been made to such ulcers with a view of correcting the nature of the discharge, and allaying the irritability of the sore; the oxides of the various metals, carbonic acid gas evolved from fermenting poultices, weak solutions of the oxy-muriatic acid, Chlorine, as it has been

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lately called, but I do not know what they call it now—they change the names of things so often.

The discharges from such sores have been made the subject of analysis by Dr. Crawford. He found that this ichorous irritating fluid contained sulphurated hydrogen gas. It is owing to its containing this, in combination with other things, that the common adhesive plaster, containing lead in its composition, becomes blackened. It is sufficiently powerful, very frequently, even to blacken silver probes that you may use in dressing. I know of nothing better for the correction of such discharges than fresh burnt charcoal. There was a druggist, a scientific sort of man, and he had a jar of water, in which some leeches had been kept, and in which many of them died, and the water became very putrid. He wished to ascertain what could be accomplished by the charcoal, in changing the appearance and quality of the water. He burnt some wood, powdered it almost directly, and put it into the water. In a short time it became clear, and was deprived of its putrescent matter. It appears to me, that it is the best application that can be used to such sores, joined to the hemlock poultice. You must quiet the irritation of the system as much as you can, and give anodynes, and so on, and attend to the state of the digestive organs."—pp. 151–157.

Lecture 14th opens with VARICOSE ULCERS. Our author condemns the ligature to varicose veins, as proposed by Sir Everard Home, on account of the inflammation of the vein and the constitutional irritation which it excites. Whether Mr. Brodie's operation with the knife is safer, he is unable to say. The nervous irritation which sometimes follow the ligature, suggests to his mind the subject of nervous affections generally, and he devotes a couple of pages to the influence of these affections upon the circulatory and absorbent functions. "Every disease is originally nervous. Disorder of the nerves is first excited, and this leads to increased action of the vessels, and increased action of the absorbents of the part." "Some diseases affect the vitality of the part." "There is a certain disorder of the nerves of a part antecedent to disease in the part. Suppose that there is disturbance in any part, you can not say that it is disease; it begins with irritation, and therefore I object to the word disease in that sense." In this language there is a singular degree of looseness. Our author's ideas are surgical to excess. To him the word disease evidently conveys the idea of a *sensible* change of structure. But disease is merely disordered function, and that irritation

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of the nervous function of a part, which precedes and produces disordered circulation and absorption, is as much entitled to the epithet diseased, as are the aggregated disturbances of the three great tissues which he enumerates. When he says that *some* diseases affect the vitality of the part, his language is still more exceptionable.

The lecture concludes with our author's opinions on Tic Douloureux. This most painful and obstinate malady, he asserts, is far more common at the present time, than in the first period of his professional life. He regards it as strictly constitutional, or rather digestive, in its origin. The excision of the affected nerves he condemns as useless, and resolves the treatment, into a proper rectification of the disordered digestive functions, by means of diet and suitable prescriptions; but on the whole he regards the disease as being generally incurable.

From Tic Douloureux he proceeds by an association of ideas (as obscure as the condition of the system in that malady) to treat of Diseases of the skin. At the outset he objects to the formidable attempts of some modern nosologists to subject them to an elaborate classification. The new names which have been introduced "bother" him; and he is certainly far from being the only one whom they have perplexed; if not driven from the subject.

"There are causes which act on the exterior of the body, as cold and wet, which weaken the circulation of the skin, that *may* lead to cutaneous disease; and many medical men, in order to keep up a certain degree of energy in the action of the skin, employ tonics in cutaneous diseases. The decoction of elm bark *is one* very much used. But I think the great cause of all variation in the states of the skin is to be met with in the digestive organs. Cuvier, speaking of the alimentary canal, says, that it is an internal sac of the skin, that the skin is inflected and lines the intestinal canal. You may have perceived that diseases of the skin arise in general from irritation of the alimentary canal, making allowance that weakness and defective circulation may sometimes be the cause of them. The main cause, however, is to be found in the state of the digestive organs.

The great means of curing cutaneous diseases is by tranquilzing the state of the alimentary canal. I have continually observed, in

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patients with these affections, that as the digestive organs were set to rights, so the cutaneous diseases were cured."—165–166.

When local applications are resorted to in diseases of the skin, if they be oleaginous, the parts must be well washed and dried before they are put on.

"The best medicated pomatum, for so I call it, is hog's lard, rubbed down with the liquor plumbi subacetatis—this is the name of it I believe—I mean Goulard's extract, in the proportion of one drachm of the latter to an ounce of lard. There are many diseases of the skin in which the unguentum hydrargyri nitratis is of use. It should not be applied too sharp—two thirds or three fourths of lard, to one third or one fourth of the ointment. I have seen many cutaneous diseases cured by the unguentum hydrargyri nitratis. Tar ointment and tar water are also good applications. This leads me to speak of washes, which produce certain good effects in cutaneous irritation. A solution of sulphate of zinc and of Goulard's extract are good washes. Also, water impregnated with sulphuretted hydrogen, by a solution of sulphuret of potass, formerly called hepar sulphuris, and the tar water, frequently do great good."—p. 168.

Many diseases of the skin produce ulceration. For PORRIGO our author suggests no application. Mercury given so as to salivate, will not cure it, but may do good, by correcting disorder of the digestive organs. Of HERPES he speaks in nearly the same language. For PSORA he advises brimstone and lard; and for TINEA, the white precipitate ointment, shaving the head, and due attention to the state of the digestive organs.

In the first part of his 15th lecture, our author speaks of inflammation of the absorbent vessels and glands; which he insists has not been sufficiently considered, by the profession. It is, in his opinion, a pathological state of frequent occurrence. It is often the result of external accidents—the constitution at the time being unhealthy. The dangerous inflammation, with irritative fever, occasionally following on DISSECTION WOUNDS, he believes to be owing to the state of the constitution, and not to the impress or absorption of a morbid poison. His remedies are a bread and water poultice, rest, and correctives for the digestive functions. To SCROPHULA he devotes but a couple of pages, and refusing all confidence

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to specifics, looks only to the improvement of the general health, by the common means.

He now comes to diseases from external violence, and other extraneous causes. BRUISES and WOUNDS first present themselves, and he concludes the lecture with a brief account of Mr. Hunter's experiments on adhesive inflammation, which we need not analyse.

The succeeding lecture contains his opinions on the treatment of WOUNDS, on HÆMORRHAGE from wounds, and on HÆMORRHAGE from the surface of ulcers. In the whole, we see nothing new, except perhaps that the latter bleeding is generally the consequence of a disordered state of the digestive organs, and requires to be treated with cathartics and other constitutional remedies. When speaking of adhesive inflammation, he refers to the restoration of noses and lips by the Taliacotian operation. Of the former he has never seen one equal to those made of *paste board!* but of the latter he seems to entertain a more favorable opinion; and as the operation appears to be one of greater practicability, we shall extract all that he says concerning it:—

"A new lip may be formed from the skin under the chin, and really this is a very important and useful substitution, both in the process of mastication and for the purposes of speech. A gentleman of this town cut out a piece of the integument from beneath the chin, just of the size he thought would do for the lip. He fitted it very nicely into a grooved edge which he had cut to receive it, twisted it about, and it united perfectly, although it was a long time before the sensation returned in the part."—p. 185.

The remainder of the lecture is on FRACTURES. In the management of these casualties, Mr. A. is a decided opponent to "extension, counter-extension, coaptation, delegation, and so on, and of the various powers to be used for the accomplishment of all this nonsense."

"The manner in which I should treat a fracture would be just this: I should have the patient laid in bed, and the limb, resting on a splint, should be placed in that situation in which it might remain for any length of time. I should make a gentle effort or two to replace the limb, or at least to bring it as near as I could, into the natural position without much effort. If I found the muscles pulling obstinately,

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I would let it alone, place the limb on a splint, and then on a pillow, so that it may rest easily. I should, in addition, just give a little something to open the bowels. The resistance made by the muscles is, I say, seldom longer than the period of twenty-four hours, and then you may manage it as you please. When once you have got the limb into its proper shape, the muscles will preserve it as pertinaciously in that position as they before resisted your attempts at doing so. Nay, sometimes they even assist in bringing the fractured ends of the bone in their proper situations."—pp. 194–195.

The period at which fractures are united, varies exceedingly in children and adults, and even among persons of the same age. The patient, in general, has a feeling of "animal consciousness" which enables him to decide whether the bones have united.

Fractures sometimes refuse to unite. This, in our author's opinion, is owing to different causes—a bad state of health in the digestive organs, motion at the time when ossific action is taking place, or sufficient time not being allowed. His remedy is protracted rest, and the improvement of the general health. Sawing off the ends of the bones often fails; and the introduction of a seton between them, as practised by our distinguished countryman Dr. Physick, designated by Mr. A. as "a gentleman in America," is still more unsuccessful. Our author has seen it produce great constitutional disturbance. Of tight bandaging as recommended by Mr. Brodie of London, and Dr. Wright of Baltimore, he says nothing.

The difference between a Compound Fracture and a simple fracture is that the latter "heals by adhesion, the former by granulation." If the blood extravasated about and between the fractured ends, can be kept from escaping, new vessels will shoot into it, bony matter be deposited, and the cure accomplished as in simple fracture; but if it escape, the cavity which it occupied must fill up with granulations. To effect this, Mr. Mudge closed and secured the wound very accurately with strips of adhesive plaster, which he varnished over, so as to make a covering not unlike the integuments; and this has often succeeded. In cases of this kind Professor Dudley, see our respected Western cotemporary, the Transylvania Journal, directs a tight bandage to the whole limb,

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so as to paralyse the action of the muscles, and prevent inflammation. The indication of Mr. M. must at the same time be fulfilled. In compound fractures Mr. A. adds:—

"You may very much lessen the inflammation, and prevent the suppurative inflammation, by diminishing the temperature of the part. There is no measure so useful in the treatment of inflammation, as that of the regulation of temperature. Lay thin cloths, wetted with Goulard's lotion, or spirit and water, over the part, to diminish any excessive heat that may accumulate there, and you will do a great deal towards preventing the evils frequently attendant on a compound fracture. Keep the parts at the same time on a splint, and perfectly quiet. It is a point of very great importance in the treatment of fractures, to place the limb, and to place the patient, in that position from which there may be no necessity to remove him for a considerable time."—pp. 205–206.

In compound fractures attended with hæmorrhage, Mr. A. has found cold applications to the wound quite sufficient. For the same purpose Professor Dudley, *loco citato*, relies upon the bandage. The two methods might be united by those who believe in the *safety* of the roller.

When the bones project through the integuments in oblique compound fractures, our author, following Mr. Pott, prefers enlarging the wound, for the purpose of effecting their return, to sawing off the protruded ends, which of necessity lengthens the space to be filled with granulations.

In comminuted compound fractures, our author advises that as many as possible of the fragments should be replaced, or left *in situ*. In accidents of this kind, requiring amputation, he does not agree with Mr. Guthrie that it should be resorted to, immediately. He would wait until the system had recovered from the shock. On the question what kind of comminuted compound fractures required amputation, we shall let our author speak for himself:—

"It does not follow, as a matter of necessity, that because a bone is comminuted, and the soft parts contused, that you must operate. There are many such cases that do well. What then are the principles which ought to guide you in determining on the operation? It is quite impossible to lay down any precise rule, founded on this or that appearance of the parts; or to say, that because this artery is torn, or that part is injured, or that the bone is broken in this or that

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manner, that you must operate. But if there appears to you to be such mechanical injury done to the living structure as could not be ultimately repaired by Nature's processes, or, that if reparable, would, from the state of the person's general health, make such demands on the vital powers as they could badly support, then you might be justified in amputating. Rules! there is but one rule in surgery, or there ought only to be one rule—*Do unto others as you would have done to yourself.* If you can say, after asking yourself, if your limb were in the condition of that man's, you would have it removed, then I say, you can with great propriety recommend it."—pp. 211–212.

In the 18th lecture, Mr. A. delivers the results of his experience on BURNS and SCALDS. He is an advocate of the Kentish plan, and after telling his pupils in what it consists, bears to it the following testimony:—

"I deem this to be a rational mode of procedure, and I think it has been condemned because it has not been properly understood. Recollect, that this stimulating plan of treatment is not to be continued after the equilibrium of the temperature is restored, and after the patient has a degree of heat and reaction established; that was never intended; you are then to dress the scald with mild applications, and leave off giving the patient cordials. He may then require a little aperient medicine, and so on. Neither are you to put your stimulating applications on a surface which has been denuded of its cuticle. Where the cutis is bare even the mildest application to that will give great pain. You should in that case give the patient a small quantity of opium in a little cordial, and put a little simple dressing on the sore. Dr. Kentish says that he has found finely powdered chalk, with which a small quantity of opium has been mixed, the best dressing for such scalds. It appears to allay the irritability and promote the cicatrization of the sore.

But supposing a scalded part to be followed by an inflammatory action and sloughing, there is oftentimes a great demand made upon the vital powers of the system to separate the slough, and even the energies of the parts surrounding the slough become fatigued. They are in that state which Dr. Brown calls *indirect debility;* and in such cases, a gradual support to the system will be necessary. This is one of the most delicate points to manage in the treatment of scalds and their consequences; the degree of support necessary to afford the system, without the danger of bringing about too much reaction. There is a very great sympathy between the surface of the body and the stomach. When a person has an extensive injury of the skin, he is, as I before said, chilly, and has a feeble pulse, but he has also vomiting very frequently; the stomach is evidently disturbed. The digestive organs suffer, and Dr. Kentish has recorded a very notable fact to this effect. He observed that many of the injuries of the skin

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cicatrized rapidly, when a spontaneous purging came on, and this led him to prescribe, in some cases, aperient medicines, with a view to facilitate the healing process, and he says that he succeeded very frequently in accomplishing it.

I can speak from experience and say, that the mode which I have now mentioned of treating scalds is a successful method, if properly managed. We have had a great many such injuries in this hospital, and since this plan has been pursued, they have generally done very well."—216–217.

From burns and scalds our author proceeds to MORBID POISONS; and this leads him to consider syphilis, gonorrhœa, pseudo-syphilis, and other diseases of the bladder and urethra; but as his views relative to most of these subjects have long been before the profession, we shall pass them over, with a notice of the disorder termed IRRITABLE BLADDER.

"The bladder is often irritable, capricious in its actions, and tender in its lining membrane, so that it will not bear distention; capricious in its actions, acting partially, not emptying itself entirely, and therefore liable soon to become distended again; not bearing distention, and tender in its lining membrane, and on that account irritable. The lining of the bladder may go on to ulceration, there may be a puriform secretion, and blood may be discharged with the urine; yet all these cases go under the title of irritable bladder. I have known blood and pus discharged in the urine without ulceration; but when the bladder does go into a state of ulceration there is but little hope of recovery. The function of the bladder is such as almost to preclude the possibility of an ulcer healing. Acid urine is continually applied to the sores, the ulcer is stretched by the distention, and even injured by the contraction of the bladder. You can hardly expect an ulcer of the bladder to get well, and, *generally* speaking, it is a lost case. I know not what is to be done. There are no remedies, but those of steadily pursuing the plan of soothing the local irritation, and putting the digestive organs to rights; and I have known instances in which people have got well, which you will hardly credit."—p. 303.

Mr. A. knows of no specific for an irritable bladder. The uva ursi has been recommended, but it is only of service "when there is a little discharge of mucous from the bladder, with a degree of languor of the patient's constitution." Mild doses of the carbonated alkalies do good; but in large portions, they increase the irritation. He has known the balsam copaiva and oil of turpentine to be useful, but they often fail;

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and his chief reliance is on reduced diet, and a proper rectification of the digestive functions.

Returning from a long digression, he resumes the subject of morbid poisons, to speak of that which produces HYDROPHOBIA. This virus differs from most others in affecting all kinds of animals; but whether they all generate it, we do not know, as many of them are not biting animals. Cats can propagate the disease, but Mr. A. thinks that it never arises, spontaneously, in them. He indeed doubts whether it ever thus arises in dogs. This poison differs from many others also, in this, that it does not commonly inflame the wound, which heals without difficulty. For hydrophobia, when it is established in the system, Mr. A. knows of no remedy. In the treatment of the bitten part, he prefers excision to the caustic, or cauterization, and considers the latter useless, if the former has been properly performed; that is to say, in such manner as to remove the whole of the wounded surface. He has, however, known the disease to occur after an early and adequate excision had been practised. Before operating, the wound should be washed with soap and water.

His 26th lecture embraces diseases of the LACHRYMAL DUCT, and of the ANTRUM HIGHMORIANUM, with the FUNGI which it occasionally shoots out. For these affections he recommends the usual operations, which we need not describe.

A similar remark would apply to the subject, which makes up the first part of the next and last lecture of the volume. It is dislocations, fractures, and diseases of the lower jaw, on which we see nothing of particular interest to extract, and shall conclude our analysis of the volume, with an abstract of our author's observations on DISEASES of the SPINE.

Mr. A. believes that there is such a thing as CONCUSSION of the SPINAL MARROW without dislocation or fracture of the vertebræ, but it is extremely rare. DISLOCATIONS he thinks scarcely ever happen, without a fracture of the processes or body of the bone. In these cases the projecting bone is *in situ*, the other is separated from it. Is it safe to employ extension and counter-extension in these accidents? Our author thinks it dangerous to the spinal marrow. The proper treatment is

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rest, perfect rest, in a horizontal posture; with the appropriate means of preventing inflammation; and at a subsequent period, stimulation of the limbs with frictions and electricity.

The spine is subject to CURVATURES. Many of these are mere deformities, unaccompanied by any diseased action. They result from tight lacing, constrained positions and movements, some weakness or defect in one of the legs, by which the weight, and consequently the specific gravity of the body are thrown chiefly over the other, &c. But an unhealthy state of the constitution is generally present. In the treatment of this affection, our author condemns the use of machinery; and recommends, that when the patient is not taking that kind of active exercise which invigorates the body, he should lie down—not extended, but in an easy position.

Curvatures of the spine from DISEASE of the VERTEBRÆ are of graver moment; and with a reference to these, we shall close the volume, of which we have given a more extended analysis than we at first designed:—

"The bodies of the vertebræ are of a spongy substance. The ends of the bones are also spongy, and scrofula may arise, and a curvature of the back be produced from a bend forward, and where many of the vertebræ are gone, then one of the vertebræ sticks out, and makes a very acute angle; and this angle, this sharp projection, is one cause of a surgeon's knowing the nature of the disease. Now, in the commencement of the disease, the question is, whether it begins in the bone or in the intervertebral substance? Now, I really cannot tell. Sometimes it is in the one, and sometimes in the other. In all probability, it is very rare that we have an opportunity of examining it at an early period. When scrofula begins, the disease goes on to ulceration, and the bodies of the vertebræ are crushed by weight. It is right to tell you, too, that you may have the disease without curvature, and you may have curvature without the disease." —p. 343.

To treat a case of this kind successfully, rest and a recumbent posture are absolutely necessary; but the measures requisite to a restoration of the general health, are not to be overlooked. Of the issue-practice, recommended by Mr. Pott, and so generally adopted by the profession, Mr. A. says nothing. In the early stages, cupping, with purgatives, is undoubtedly beneficial.

(TO BE CONTINUED.)

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THE

WESTERN JOURNAL

OF THE

MEDICAL & PHYSICAL SCIENCES.

JANUARY, 1829.

ESSAYS AND CASES.

ART. I.—*An account of the successful resuscitation of three persons from suspended animation, by submersion in the river Ohio, for twenty or twenty-five minutes.* By RICHARD POVALL, M. D. of Philadelphia, in a letter to the Editor.

SIR—Your letter bearing date the 21st instant, (December) and in which you express a desire that I should furnish you for publication in the Western Journal of the Medical and Physical Sciences, of which you are the Editor, an account of the means by which I succeeded in restoring three persons of colour from a state of suspended animation by drowning, when the slave boat sunk in the Ohio a few weeks ago, was, by the polite attention of my friend Peter Benson, Esq, of your city, forwarded to me, and was received yesterday. I comply most cheerfully, sir, with your request; but regret that my bad state of health, in combination with other circumstances beyond my control, will prevent me from giving you so full an account of the interesting cases to which you refer as they intrinsically merit. I must therefore, for the present, be content to state, simply, the cases as they occurred, and the means I employed in restoring to animation the sufferers, without entering largely into the inquiry—how it came to pass

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that the means, simple as they were, and which are not new to the Medical world, should have been so singularly successful in my hands. This I may do, however, at some future day, when circumstances may not be of so discouraging a character, to a satisfactory accomplishment of my views, as they now are.

On an early day of the present month, I was on board the steam boat General Marion, as a passenger, on my way from Wheeling to Cincinnati, and about 8 o'clock, A. M. the steam boat took in tow a slave boat containing 27 slaves of various ages and of both sexes. The slave boat had not been attached to the steam boat one minute, before the former was put into a sinking condition with all hands on board. At this juncture, the greatest confusion ensued on board of both boats:—the crew of the sinking boat were calling upon that of the steam boat, with the most piercing cries, for help!—The jolly boat, belonging to the steam boat, after a short delay was now put off to the succour of the wreck, but it did not get to its relief until seven of the negroes, two adult women and five children, were submersed, and had been kept in that situation at least twenty or twenty-five minutes, by means of a strong board covering erected over the boat for the purpose of protecting the crew from bad weather, and under which, those who suffered suspended animation, and those who finally perished by drowning, were reposing at the time the catastrophe occurred.

There were only five bodies recovered out of seven that suffered submersion; three of whom were perfectly restored to animation and sound health, by the means stated below. One of the other two having been under water more than thirty minutes, the same means were used, but were found inadequate to effect the same salutary end that had been effected in the other cases, though they were persevered in for a long time. The fifth subject did not claim my attention, it having lain under water so long before it was recovered as to preclude all hope of success in restoring it to animation, however skillful and diligent I might have been in the application of my means.

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The three successful cases claimed my attention in rapid succession, insomuch, that I found myself working upon each one at short intervals, in less than three or four minutes from the time I commenced upon the first.

The ages of the little sufferers were as follow: the first one handed to me was twenty months—the second fourteen months—and the third three months old. The two first were females, and the last a male. They were taken out of the water, in order of time, exactly as I have recorded their ages, (i. e.) the eldest first, and so on. From the guards of the steam boat I received in my own hands each of the patients and conveyed them immediately to the cabin, which had already been made warm and comfortable by a large fire of some one or two hours standing, before the accident occurred. I next stripped them of their wet clothing, and called into requisition all the dry napkins that were at hand, and with which I wiped them perfectly dry from head to foot. Pillows and blankets were next seized upon, and most valuable means they were in restoring my patients to life and animation. With the head and shoulders a little elevated upon the pillows, and the blankets being warmed, I proceeded to wrap the patients in them, and at the same time to use friction in the gentlest manner, especially over the epigastric region. After a little time, as the signs of returning animation developed themselves, I extended the frictions towards the superior and inferior extremities. These methods having been diligently used for some minutes, I very soon had the satisfaction to perceive that the natural warmth of my patients was fast returning, and that they not only began to breathe freely, but that their powers of deglutition were also restored. At this juncture, I administered, without the loss of a moment, small draughts of warm brandy toddy, a teaspoonful at a time, with the most beneficial results. In this stage of my operations, my patients, each of them, had, spontaneously, copious alvine evacuations, and from that moment they recovered most rapidly. Perceiving they were likely to do well, I now turned them over to the care of nurses, and gave my atten-

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tion exclusively to the fourth and unsuccessful case, the subject of which was a female, aged about nine or ten years, and as before stated had been under water more than thirty minutes before she was received into the cabin. All the means employed in the three successful cases were diligently applied to this one, in conjunction with others—such as inflating the lungs, stimulating the nostrils, the tongue, and fauces, with such means as were at my command. But all was to no purpose. The vital spark had doubtlessly been entirely extinguished before she was taken from the water.

In three or four hours after the reanimation of my little patients, I visited them on the upper deck of the steam boat, and found them all so much recovered from the effects of their submersion, that a stranger looking on them would not have suspected that any harm had so recently befallen them. About eight hours after this visist, the eldest had some fever, which was very soon subdued by a dose of the sulph. magnesiæ. The other two had no fever whilst I continued to attend them, which was for two consecutive days after the accident.

Considering the great length of time* the three restored patients had been submersed before they were subjected to the operations of the simple means employed in effecting their resuscitation, it would seem, on the first view of the subject, that some superior merit should be ascribed to those means, but in doing that, I am not sure we should be entirely free from error. I am inclined to the opinion, that if these three subjects had been of *adult age*, and *had remained under water the same length of time, the same means of resuscitation might have been used*, and in all probability without such signal success as attended them—because, as the vital principle is known to be

* Most of the respectable authors agree that "when a person has remained above fifteen minutes under water, there can be no considerable hopes of his recovery." The instances recorded by Tissot, of persons having "remained *six hours* under water," and then were "restored to life by the heat of a dung hill," are so exceedingly improbable, that it requires a great stretch of credulity to believe them true.

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less tenacious in adult age than it is in extreme youth,* it might not, under the hypothetical circumstances here laid down, be able to preserve itself from total extinction—thus submersion for *twenty-five minutes* might be sufficient to extinguish the vital principle in a subject of adult age, when it would be insufficient to extinguish the vital principle in a very young subject, by reason of its greater tenacity. From these premises I am ready to conclude, that the happy issue of my three successful cases, was more owing to the *superior vital energies of the youthful subjects*, thereby giving to them extraordinary recuperative powers, than to any *superior efficacy to the means employed* in effecting their reanimation.

It may be well to remark in this place, that the youngest subject of the three successful cases of which we have been speaking, was restored to animation first, and with less exertion than either of the other two, although it had been under water a few minutes the longest. The same may be said of the next youngest, compared with the eldest of the three. These facts I consider as in some degree illustrating and establishing the theory which I have nothing more than hinted at in this communication.

ART. II.—*Observations on Fever and other Diseases of the South and West.* By MEDICUS.

NO. I.

[The following communication which will be found to contain several animadversions on the opinions of two distinguished professors of Transylvania University, is from the pen of one of its own graduates—respectable in society and in the profession—who prefers to have it published anonymously. We see no reason for refusing his request.—ED.]

I may be esteemed irreverent by some, because of my unwillingness to accept any of the present and popular opinions

* "Children display," says Professor Chapman, in a note in James' Burns, "an uncommon *tenacity of life*, and strength of constitution. They often survive under circumstances which destroy adults. They have often been found living at the breasts of their mothers who had perished by exposure to cold."

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of disease, and to others I may seem arrogant, when offering to the public the views which I entertain. Were I here to express a total disregard for the opinion of all such as suppose me either irreverent or arrogant, I should at once defy the credulous and the majority of our profession. I should also act insincerely. These men—the credulous, in a great degree give the ebb and flow to popular opinion, and that does much in medicine, as well as in law, politics, and theology.

Popular opinion is the analytic crucible, if directed by science in its operation, which refines all theories and sanctions or condemns all courses and all customs. It has long since conceded to every man, the privilege of publishing his views, and science claims them at the hands of her votaries. As in Pharmacy no man has the exclusive right, in the eye of philanthropy, to prepare and vend any particular or useful composition, so in medicine, no man has the exclusive right to the quiet and undivulged enjoyment of any views connected with his profession.

All theories of the present day should be considered as common stock, the proceeds of which all are equally entitled to receive or reject. They are but flowers blooming on bygone hypothesies, and these but the scions of others, antecedent to themselves; which but for the loss of an occasional sprout, might be traced back to the days before the deluge. Time, however, has gathered such into her storehouse as are unnecessary for our improvement.

Having said this much about our mutual dependence and claims upon each other, and of the propriety of esteeming all theories and all facts as common stock, I hope not to be accused of plagiarism. Whatever the reader may discover herein, which he himself has seen elsewhere, I willingly confess is not my own. To it I set up no claims.

Before entering into the main design of this paper, I would remark that Health is the great object of our profession. That this depends upon, or is the result of the sound and normal action of all the divisions and subdivisions of every organ and tissue of the body. Life is the material agent which gives power and activity to those divisions and tissues,

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A well balanced state of atmospheric air, is what affords the most adequate and the most necessary amount of this matter.* A properly regulated condition of the atmosphere, affording to each individual its requisite *quantum* of life or vitality, and this acting in sound organs and tissues, constitutes health, and is the natural condition of the body. This is the condition in which we were created originally, and which most usually obtains at our birth. The condition of health is the positive and natural state of the system. It is the active and motive condition of the body. Disease is the unnatural, inactive, immotive, and negative state. Health is natural. Disease the reverse or the opposite. Whatever is the reverse or opposite to nature, cannot really and positively exist. Disease then is not an actual condition of the body *in et per se.* It is parasitical, and depends upon a negative, or the absence of health for its prevalence; just as darkness prevails when light is extinguished, or as we become cold when heat is removed from us. As light may vary, from the splendid brilliancy of mid-day, to absolute darkness; as caloric may range in degree from the mountain melting heat of Enceladus' breath to the congelation of mercury, so health may prevail from the point of giving centrifugal and centripetal action to the proper tissues of the system, down to absolute and entire extinction. Were it not for the climatorial vicissitudes, whether dependent on different degrees of temperature or miasmatic pharmics I will not here enquire, and for the wear of all ponderable matter, health would be perpetual and old age universal. Accident would be the only outlet to life. Inasmuch as we can neither regulate the air nor give perpetuity to matter, it is proper next for us to enquire into the causes which produce a departure from health or a prevalence of disease. I do not intend so much to investigate the

* In some future hour I shall pen an essay designed to establish, first the truth of Life's being a material agent; second, that it is imponderable; third, that it is originally communicated to us by our parents and subsequently derived from the atmosphere; fourth, that it may and does exist in a latent as well as an active condition; and lastly, that it is the same in man, and in vegetables.

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character of the impressive cause, as to ascertain the ubiquity of the primitive impression and its effects, as a cause of future symptoms and inconvenience.

Almost any of the popular works on the theory of fever affords satisfactory refutation of the former opinions and theories of disease; but in the Pathology and Therapeutics of Professor Cooke, of Transylvania, may be seen the most extensive exposition of old opinions that I have met with. Not choosing here to notice particularly many of those to which I have given reference, I shall advert to some composing the stock upon which the professor has engrafted his own theory. Hippocrates makes "disease to consist in an undue proportion of phlegm, blood, bile, and black bile." Sylvius says "that the cause of every continual fever is choler or lympha (under which I comprehend the juice of the pancreas, and spittle itself, inasmuch as they are carried to the heart) both vitious and raising an effervency in the right ventricle of the heart, whence the pulse is continually produced more frequent." Dr. Browne Langrish, in his Practice of Physic, says, "Obstructions are generally formed in the last series of the vessels, or in the ultimate branches of the sanguine and lymphatic arteries, and always arise from excess in the diameter of obstructing matter, above that of the canal through which it ought to flow." "When any of the juices stagnate in their respective vessels, or lie out of the verge of circulation, they will ferment and turn putrid from an intestine and fermentative motion, occasioned partly by the heat of the body, and partly by the heterogenity of their constitutive parts." "The blood in a state of health is a smooth demulcent liquor whose globules, both of the red and serous parts, are spherical and polished; but whenever the natural forms of the component parts are broken and destroyed, they must necessarily become angular, acrid, and pungent, and thereby more or less introduce an acrimonious quality which will *weaken* and destroy the vital powers."

"A disease," says Sydenham, "is no more than a vigorous effort of nature to throw off the morbific matter which arises either from such particles of the air as having a disagreement

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with the juices, insinuating themselves into the body, and mixing with the blood, taint the whole fraime, or from different kinds of fermentations and putrefactions of humors detained too long in the body, for want of its being able to discharge and digest them on account of their too large bulk or unsuitable nature."

Our illustrious Rush says "From the facts and analogies which have been mentioned, I am led to conclude that the common forms of fever are occasioned simply by irregular action or convulsion in the blood vessels. This irregular action is of two kinds. The first is seated in the muscular coats of the blood vessels themselves. The second consists in an irregular distribution of blood to different parts of the body, particularly to the brain, lungs, liver, and spleen."

Professor Cooke makes cold and miasma to blacken the blood, to change the color of the skin and alvine evacuations, and the remote cause of fever to weaken the action of the heart.

The opinion of Sylvius that fever depends upon a vitious condition of the lymph and choler; of Langrish that the contents of the sanguine and lymphatic vessels, when they stagnate will become putrid, and, necessarily, angular, acrid, and pungent, producing an acrimonious quality which will *weaken* and destroy the vital powers; of Sydenham that disagreeing particles of the air mix with the juices and taint the blood; of Rush that fevers are occasioned by an irregular action or convulsion of the vessels; and of Cooke that the remote causes of fever, cold and miasma, produce dark blood, yellow skin, and green stools, are all kindred branches of the same family and are all wrong. They make disease to consist in one of the effects of itself. The blood and the juices are with them, all wofully disordered; but how they come so, or by what process is produced the yellow skin, green stools, black blood, or what causes an undue proportion of phlegm, blood, bile, and black bile, we are left to conjecture. On this subject Dr. Cooke of Transylvania, is as mute as Hippocrates of Cos. But more of "Cooke on the theory of fever," presently.

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Professor Caldwell's opinion of fever is a corruption of Sydenham's. But read him. "The elements of fever afford incontestible evidence of the recuperative powers of the human system, and shew fevers to be nothing but an effort of those powers to restore health." *Elements of Fever*, sec. II.

"From whatever cause it may arise, or whatever course it may pursue in becoming so, fever when formed is a disease of the whole system. It invades the head, the trunk, and the extremities, deranging there the nerves, the muscles, the skin, the chylopoietic organs, and the glandular system generally. It injures also the brain and deranges of course the intellectual functions." *Ibid*, sec. III.

"Fever is nothing but an effort of nature to restore health. Fever is a disease of the whole system." Disease is sickness. Sickness of the whole system is here turned into a physician, and is making efforts to restore health, or to destroy itself. In these restorative efforts it will invade the head, the trunk, and the extremities, and derange the nerves, the muscles, the skin, and all the highly vitalized tissues of the system. It must injure the brain too, or its ultimate object,—to restore health,—cannot be affected. Then as fever is a physician and only at times needs a little adscititious aid, our duty plainly is to help it to invade the whole system, to derange the nerves and chylopoietic organs, and to injure the brain. This is confessedly no difficult task.

Reconcile these paragraphs to science, and it only is necessary, to the restoration of health that we should assist the elements of fever, first to invade the whole system; secondly to derange the nerves, the heart, and the absorbents. This amounts to active convalescence. The last indication in this course is just to injure the brain a little and suspend further attendance. But I must return to the "Theory of Fever," by Dr. Cooke.

"The remote cause of fever (miasma) does not produce its first effects upon the stomach. It affects (first) the color of the blood of every person exposed to its operation, and with this the color of the skin and passages." "Black blood does not stimulate the left ventricle of the heart like scarlet blood."

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Blackness of the blood and the consequent weakness of the heart is the effect of miasma.

It would at least have been satisfactory, for the doctor to have said by what means or what process the blood, the skin, and the passages were changed in their color. Is it his opinion that the putrefactive process of vegetation yields to the air a quantity of gallic acid, and that this acid "insinuates itself into the juices which are stagnated and without the sphere of active circulation," unites with the iron of the blood and thus forms ink or produces the dark colour. I regret that he did not explain the manner of its production.

"Black blood does not stimulate the left ventricle of the heart like scarlet blood, and therefore the heart is weakened." "The remote causes of fever, cold and miasma weaken the action of the heart." "The remote cause of fever will blacken the blood." Why this confusion. Here the black blood is made to weaken the action of the heart; here also the remote cause of fever is made to weaken the action of the heart; and further the remote cause of fever will blacken the blood. In the proposition we see two effects, a weakened heart, and black blood from one (the remote) cause, and in them we see two causes, black blood and miasma, produce one effect, weakened action of the heart. If capable "*cognoscere causas rerum*," why this confusion? That black blood does not stimulate the left ventricle of the heart like scarlet blood, is proved by the experiments of Goodwin, "who attended carefully to the changes in the color of the blood, and in the corresponding contractions in the left auricle and ventricle of the heart. In all the examples, he observed, that when the blood which passed into the left auricle was florid, the auricle and ventricle contracted strongly, and the circulation went on as in health, but when the blood began to put on a shade of brown the contractions were diminished, and when it was black the contractions ceased."

The result of these experiments is what might have been predicted. The slow and diminished action of the heart are not the effect of black or brown blood, but they were produced, or both occurred from the injury done to the

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animal. As the heart became feeble in consequence of the shock sustained by the nervous system, the injury being so great as not to admit of a reactive effort, the heart was rendered, in common with the whole body, quite feeble, unable to propel the blood to the capillaries, and they also, injured in their powers, were ineffectual in their endeavours to perform on it their own peculiar office, or to send it to the lungs through the veins more effectually to be aerated or vitalized, hence its blackness. As the blood became brown or dark, the powers of nature were sinking; and as it was made black the heart ceased to contract; not because the blood was black, but because the animal was dead. All experiments which are in their effects so absolute, as to prevent reaction, produce death, and which give but a short time between the experiment and death, I imagine will give rise, as an effect antecedent to the final end, to the blackness of blood. In what manner, more effectually, this is brought about will be explained hereafter.

"Black blood weakens the action of the heart. If an accumulation of blood in the vena cava, amounts to that degree which gives rise to a convulsive agitation of the body, as in ague, whereby all the veins are compressed, and the blood urged vehemently to the heart, that organ excited by an increased quantity of its natural stimulus to increased action, fills the arteries, &c."

Accumulations in the vena cava are always of black blood; black blood weakens the hearts action; black blood is the natural stimulus to the heart, and will, when in increased quantity, excite the heart to an increased action. Now be it remembered, that the Professor in writing of black blood, always means that blood which is changed from a healthy, to an unnatural color, by the remote cause of fever. If a small amount of black blood will have an enfeebling effect upon the heart's action, what will an increased quantity of the same stimulus do? Assuredly an immediate suspension will be effected in its action. If the superior extremities of a laborer be fastened with a twine, it in some degree interferes with the use and power of exercising them, but bind him with a strong cord hand and foot, and his manipulating capacity is wonder-

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fully increased! If the idea conveyed by the Professor is not tantamount to this, I egregiously misunderstand him; and if it be not heterodox, I misunderstand the subject. It is not entirely clear to me either, how black blood in the vena cava should be the natural stimulus to the heart. If the natural stimulus, why bring about an enfeebled action, or why produce an excited or increased action? It is represented as producing both. Neither weakened nor increased action is the natural action, and if the stimulus be natural, and the organ natural, why an action contrary to nature?

"The heart after long and violent exercise is disposed to relax its efforts, the accumulation of black blood, continually increasing whilst the heart is resting, gets, during rest, renewed vigor, and the necessary supply of stimulus having come to hand, it forthwith begins to increase its action:" notwithstanding the accumulated and black blood as well as the remote cause are both present, and both have a direct tendency to weaken its action.

It is no difficult matter to believe, that a few glasses of good Port wine will increase the action of the heart, and that as many pints will produce death; but is it so, that a debilitating power will, when applied in an increased volume, produce any other effect but that of greater weakness?

The doctor in his essay on fever apprehends no danger in the stage of excitement. That is all well enough. In the apyrexia, however, the system is in peril. Then it is, that congestions take place; that the stagnant juices take on an intestine and fermentative motion; become putrid, and turn black. And yet in his papers on autumnal fevers, his curative measures are all directed to the stage of excitement. He wishes them to operate in the active stage of fever. His evacuants, one drachm, half ounce, and ounce doses of calomel, or a tablespoonful of cathartic pills, must be given at such a time, as will cause the black, green, and yellow consistent excreta to pass in the active stage of fever. When he bleeds at all, it is done in the active stage of fever. He deprecates the idea of blisters in the cold stage, hates sinapisms, scorns tonics, and revolts at stimulants. When he

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can do any thing in the stage of excitement he does nothing in the stage of depression. It would, according to the view which I entertain, seem more scientific, if but one stage admits of danger, to direct our attention to the condition liable to produce or bring on injury, so that the system may be sustained and mischief avoided. If all the peril, is in the cold stage or remission; if the increased action of the heart is what relieves the engorgement, the fatal accumulation in the vena cava; why permit the cold stage to occur? why not keep the heart and arteries actively and constantly engaged, by the administration of some known and powerful stimulus, and thus prevent an accumulation, and at once cure the patient?

The Professor, in his willingness to exterminate all sympathetic communication or associated action, seems to have forgotten that the human body was possessed of any thing but a heart, arteries, venous cavities, black blood, and consistent passages: with him there is no secreting organ but the liver—no secretion vitiated but the secretion of bile. The lungs, the skin, and the kidneys are consigned, all together, to inutility. He regards neither the one nor the other of these important organs. From the contempt with which he treats the nervous tissue, he might be presumed as ignorant of it, as he is actually unmindful. The skin and the lungs being organs of such magnitude, both as regards their use and diffusion, and the nervous tissue being co-extensive with them in their amplitude, and these being the parts directly and constantly exposed to the operative power of the *vis noceus*, it seems a little strange, that the heart, the blood, and the liver, should be the camps first besieged by our enemy. And unless informed how the miasm or cold, can disorder these interior parts, without first injuring those through which it passes, I fear I shall continue to doubt the fact. Until convinced that the remote cause is endowed with a *tactus eruditus* or an elective power, so incredulous am I by nature, that I must remain sceptical of its capacity *first* to disturb the inward parts of the system.

According to the views which I have entertained for five or six years, (the period through which I have pursued the active business of my profession) the skin and the lungs possess the

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power to aerate or vitalize the blood. This they are enabled to do, by the assistance or presence of a sound and well balanced nervous tissue. The carbonic acid gas of the lungs and the perspirable matter of the skin, are equally secreted from the blood, by their respective organs, and together with the urine, they are as equally excrementitious, for they are deleterious when retained. In health the skin, the lungs, and the kidneys perform more excrementitious labor, than all the rest of the system. The suspension of their labor may be affected by the application of marsh poison, (if there be such a thing,) by cold, by heat, or by any thing which has the power of injuring the nervous system. Inasmuch as this is the system used by the body to give signs of impressive action, both to the individual impressed and to the physician; as the various secretions of the body depend for their proper and correct production upon a well and sound condition of their respective organs; as each organ is composed of a variety of tissues; as the nervous and vascular tissues pervade every organ; as the skin and lungs are always exposed first to the influence of noxious agents; as all active general disorders commence with a sense of coldness; as coldness is one of the invariable concomitants of the class of diseases called neuroses, I infer that the primary diseased action occurs in the nerves.

In another number of the Western Journal, I shall say what nerves are first disordered; what causes the cold fit of disease; account for the blackness of blood, and consider its claims to be regarded as a cause of reaction. This will prepare the way for the explanation of the pathology of the prevalent diseases of the South and West, and the correct mode of treatment.

Tennessee, December, 1828.

ART. III.—*Lectures on Anatomy, Surgery, and Pathology; including observations on the nature and treatment of Local Diseases: Delivered at St. Bartholomew's Hospital.* By JOHN ABERTETHY, F. R. S. Surgeon to St. Bartholomew's and Christ's Hospitals, &c. 2 vols. pp. 748. Boston, 1828.

(CONCLUDED.)

We resume the analysis of this interesting work.

Lecture 28th, the first of the 2d volume, begins with accidents of the shoulder joint; which from the frequency of their occurrence, not less than the importance of the parts affected, deserve the gravest consideration. Admitting, moreover, of little delay, there is no time to send to a distance for one who may have made surgery a special object of attention, and every physician, therefore, should be prepared to treat them on the most approved principles.

FRACTURED CLAVICLE. No bone is more easily reduced: none more difficult to retain in its proper place. Those who have used the roller of Desault, must have found its application attended with difficulties, which, in reference to its retention, are still greater. The bandage of Boyer has seemed to us, on the whole, more simple and efficacious; but even this cannot always, in private practice, where patients take great locomotive liberties and are often impatient under every kind of compression, be easily kept adjusted. Disappointed in their expectations, and fatigued by the reapplications that generally become necessary, many practitioners have dispensed with both; and contented themselves with merely placing the arm in a short sling, a method which in fact answers very well, except in females where *all* deformity should of course, as far as possible, be prevented.

The bandage preferred by Mr. A. and used in St. Bartholomew's, appears (for he describes it loosely) to be the same

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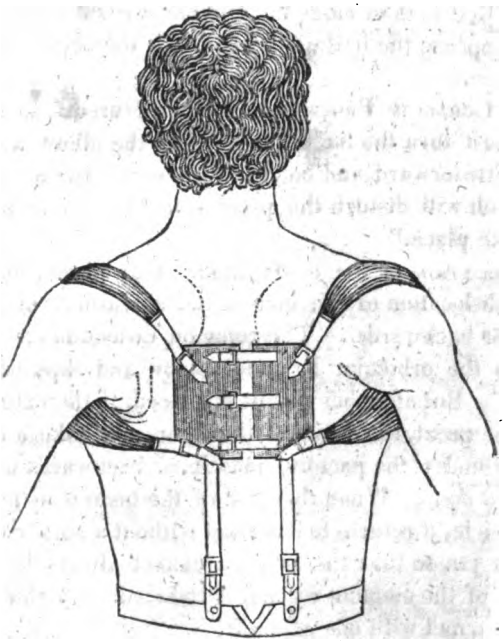
with that employed in Guy's hospital, and figured by Sir Astley Cooper, in his work on Dislocations, and on Fractures of the Joints. Its application may be seen in the following plate copied from Sir Astley's valuable treatise.



The clavicle is liable to DISLOCATION at both its extremities, but the sternal is far oftener displaced than the scapular. The treatment is the same as when the bone is fractured.

Mr. A. here takes occasion to advise his pupils to examine "accidents with gentleness:" an admonition which may with great propriety be extended to the practitioners of this country. We have often been shocked at witnessing the unfeeling energy, with which surgeons prosecute their examinations of parts in a lacerated or morbidly sensible state. They act as though the *ultimate relief* ought to reconcile their patients to the harshest manipulations. These, however, they had better reserve for the dead subject; where they cannot excite

inflammation, nor aggravate that spasmodic action of the muscles, which so often constitutes the main difficulty to be overcome. We know of no duties in the discharge of which, it is more commendable to conjoin the *suaviter in modo* with the *fortiter in re* than those of our profession, for the plain reason, that in most cases the said *suaviter* is directly calculated to appease the irritation, which it is the object of our art to subdue.

The Coracoid Process may be fractured. In this case "you must turn the hand round, bring the elbow and shoulder a little forward, and bend the arm across the breast; then no motion will disturb the process, and in due time a union will take place."

Dislocation of the os Humeri. Our author has never seen a dislocation of this bone either upwards or directly forwards or backwards. The common dislocation is where it "bursts the orbicular ligament below and slips out of the socket." But after being thus displaced, if the external violence be great, the head of the bone may take a direction forward under the pectoral muscle, or backwards under the *latissimus dorsi*. When the head of the bone is lodged under the clavicle, it returns to its socket without a noise or any perceptible jar, so that the surgeon cannot always be sensible himself of the moment when it is reduced. Of this we have ourselves, met with one example.

In attempting to reduce an ordinary dislocation of this bone, it is of the utmost importance to take the muscles off their guard. The patient's attention should be diverted from them and occupied on some other subject. It is the irritable state of the muscles that opposes the reduction.

"I have, says Mr. A. reduced several dislocations myself, by a sort of legerdemain. I should, in that case, say to a patient, I do not know what is the matter with your arm; but you hold it so tightly I cannot move it; cannot you leave your elbow to me? I will not hurt it; let me move it. Oh! now you are holding it. Does the motion hurt you? No, it cannot do that. Well then, when you have got the patient to let you do this, you have only to engage his mind with something or other—and there is nothing more likely to engage his mind, than to talk to him about the way in which he

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met with the accident,—and then you have only to push it in. Now if you do this, you make a lever of the bone, applying the prop at the same time.

I stated that a dislocated jaw was to be reduced on this principle; but I said I would not at that time explain it. If you move a patient's elbow upward and downward, backward and forward, even to a considerable extent, without putting any prop near to the head of the bone, what do you do? Seeming to do much you do nothing at all; the bone does not move one jot from its situation. But suppose I put a prop near to the head of the bone, and raise the head of the bone, then I raise the head into the socket. This is making a lever of the bone itself, applying the prop as near to the head to be raised as possible, in order to increase the length of the lever in applying the power to the other end. Well, I say, if you can get a person off his guard in this manner, you have just to put your hand up to the head of the bone, depress the elbow, and it instantly goes in. But do not believe that you will often succeed in this.

Well, suppose you cannot elude their vigilance, (that of the muscles,) and I say it is not be expected; nobody, who knew how alert the muscles are, would undertake it. Well then you must overcome their power. And how are you to do this? Not forcibly—your conduct must be governed by certain known laws. You must be acquainted with the action of muscles. Muscles have great power, but no muscle can act in a moderate degree unremittingly.

Well, you have to engage the attention, and then you have to pull; yet you do not pull them violently, or in a way to create alarm or opposition. I should always be inclined to say to a patient, 'Upon my life you hold your arm so tightly—if you would but give way—only yield a little, and the thing would be done.' Now I speak of a case where it is simple, near the cup, and where you have simply to draw it. As to using tackle and pulleys, and so on, in a case of this kind, I laugh at it. It seems like breaking a butterfly on a wheel. You have only to make a man fast round a bed-post, or something of that sort, put a napkin round him and pull; pull so as you will not soon be weary of pulling. If you set persons to pull in a violent manner they get tired, and the patient gets tired. Then they tug, then they slack a little. Then they pull, then they slack a little again; and in this way they never will succeed. Oh! it is such a regular pull-baker pull-devil concern, it is quite shocking."—pp. 10—12.

When the head of the bone is driven under the pectoral muscles and lies nearly in contact with the clavicle—

"I never then would attempt to undertake to reduce it without having pulleys, tackles, and every sort of machinery at hand, such as should ensure my success. And the way to do it is this:—You must have a cord, surrounded with tow, and afterwards sewed up in

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leather or cloth; loop it sufficiently to slip over the shoulder, bring it against the inferior costa of the scapula, and bind the scapula up. In short, you make a sort of pad, such as people wear who carry pails on their heads. Then you have straps coming from the pad, which should be fixed in the wall with four screws; but let the straps be very far apart, otherwise you would squeeze the patient's body; and let them be fixed so as not to impede the head of the bone coming into its socket. Then by pulling at the elbow you will bring it into its socket. The best way is to put some buff leather round the elbow, and I have always been in the habit of doing it, by making a half hitch, or clove hitch as the sailors call it. When this is put round over the buff leather, one of the ends will draw and the other will not. The one will wedge or jam, and you draw the other as tight as you please. What does it signify if you should stop the circulation? It does not signify for the moment. You put on two half hitches, and pull the bone down to, or under the socket, towards the inferior costa of the scapula, and take great care that the extension be unremitting. Now, under these circumstances, as soon as the muscles are engaged in resistance, you say to the patient, 'Oh, sir, you are holding—you are opposing, there is nothing that will hurt you; do give way, do yield a little;' and as the muscles become weary, you find the head of the bone to come further and further from under the pectoral muscle; and, if you are using pullies, you say to the patient, 'Just half an inch more, sir; just half an inch more.' Then, when it is below the socket, good may be done by putting a prop under the head of the bone and depressing the elbow. You may, with your own hands, use this expedient for reducing the bone. I never failed but in one case."—p. 13.

Dislocations may be reduced after a considerable time. The adhesion of the torn ligaments to the surrounding parts, is what opposes their reduction. If upon applying a moderate force for some time the head of the bone is not found to move, all further attempts should be given up. As to bleeding, the warm bath, and other relaxing measures, Mr. A. condemns them, as unnecessary to the abatement of muscular contraction, and inappropriate to the dissolution of the new adhesions.

On compound dislocations and on fractures of the os humeri, on fractures of its neck, and on fractures of the scapula, our author has a single page, in which we see nothing particularly worthy of being extracted.

The succeeding lecture is on DISLOCATIONS and FRACTURES of the ARM and HAND, including the FINGERS. A dislocation

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of the elbow inwards, is a rare occurrence. The most frequent dislocation of this joint, is that which drives the radius off its tubercle and plants the ulna in its place. A luxation of the elbow joint is to be ascertained by observing the relative position of the olecranon process and the condyles, especially the internal. The fore arm is generally bent to a half right angle, and you can neither flex or extend it. To reduce it—

"You are to pull the bones downward and inward, for the purpose of making extension, and, by using the force steadily, they slip into their proper places. And you are assured the dislocation is reduced, from this circumstance, that you can bend and extend the fore-arm to its utmost limits, and turn the radius into a state of pronation and supination.

But you may reduce the ulna and not the radius; and the radius may be dislocated without the ulna. In either case, the reduction of the radius is to be effected by a separate operation. You reduce this by making a lever of the bone, applying a prop to the part, and bending the fore-arm. You press down the head of the radius. I now state to you the principle. You make a lever of the bone, raising the one end and depressing the other: and, in short, if you know the principle, why, you can apply it to a vast number of cases.

The radius may be dislocated separately, either forward upon the os brachii, or backward; and when it is dislocated backward, why it is a difficult dislocation to reduce. To reduce it, you have to pull it steadily at a half right angle, and to press back the os brachii at the same time. That is the mode of reducing it, as far as I am capable of judging; but it certainly is a difficult dislocation to reduce." —p. 18.

When the fore arm is dislocated backwards, the coronoid process is often fractured, and the arm is permanently extended. As our author is silent respecting the mode in which this dislocation should be reduced, we shall transcribe from Sir Astley Cooper, the methods which he has been accustomed to employ.

"This dislocation is easily reduced by the following means: The patient is made to sit down upon a chair, and the surgeon places his knee on the inner side of the elbow-joint, in the bend of the arm, and taking hold of the patient's wrist, he bends the arm; at the same time he presses on the radius and ulna with his knee, so as to separate them from the os humeri, and thus the coranoid process is thrown

from the posterior fossa of the humerus; and whilst this pressure is supported by the knee, the arm is to be forcibly but slowly bent, and the reduction is soon effected. It may be also accomplished by placing the arm around the post of a bed, and by forcibly bending it while it is thus confined. I have also reduced the limb by making the patient, whilst placed upon an elbow chair, put his arm through the opening in its back, and then having bent the arm, the body and limb being thus well fixed, the reduction of the dislocation was easily effected."—*Treatise on Dis. and Frac. of the Joints*, p. 334.

In treating compound luxations of this joint, after replacing the bones, close up the wound with sticking plaster, and then varnish over the dressings with a varnish made by dissolving sealing wax in alcohol; keep the limb steady, and sponge it perpetually with water, so as to keep the heat down; and the patient will generally do well.

On fractures of the lower end of the os humeri, of the olecranon process, and of the fore arm, we shall extract nothing.

Accidents to the WRISTS. The wrist may be dislocated outwards or inwards, when the lateral ligament must be ruptured, or it may be thrown backwards or forwards. After reduction, which is easily effected—

"Treat it as a fractured fore-arm, that is, by putting a little tray of pasteboard, which will support the hand in a continued line with the bones of the fore-arm, not letting it drop down by its own weight, and steadying it by lateral splints, or at any rate by a splint put into the palm of the hand, not to suffer the hand to turn round.

But SPRAINED WRISTS are perpetually accidents of tedious cure; and for a very good reason; because the injuries are not inflicted on the ligaments or joints only, but all the sinews are inflamed; inflammation takes place—there is a gumminess, and swollen state of the parts, which render the hand crippled for a considerable time. Now, in this said position of the fore-arm, all the sinews run in a straight line; there is no twisting of the fore-arm, and all the sinews run in a straight line, when the fore-arm is in that situation. Let it move about, and the sinews are twisted; and if the sinews are inflamed, the twisting and motion very materially aggravate the inflammation. In short, in a common sprained wrist, if there was no ulceration or inflammation, the wisest thing a surgeon could do, would be to support it with a splint, keep the hand steady, and then keep down the inflammation as you would in a case of dislocation of the *olecranon*."—p. 22.

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Accidents to the CARPAL and METACARPAL BONES. Mr. A. never saw a dislocation of any one of the carpal bones. But the bones of the metacarpus may be luxated. In the treatment of this affection our author disapproves of Mr. Hey's recommendation, to saw off the end of the luxated bone, for it opens the joint, and exposes the synovial membrane. He would at least wait until all the inflammation had subsided, and see if the patient was likely to suffer great inconvenience. It would then be time enough to proceed to the operation. When the bones of the carpus are shattered, as by the bursting of a gun, Mr. A would replace as many of them as possible, put the hand in a case to keep it steady, sponge the part continually, and attend to the diet and habit of body of the patient.

In dislocations of the fingers, that of the last joint only presents any difficulty. It cannot be reduced by extension, for there is no part to get hold of. Mr. A. learned how to manage such a case from one of his pupils, Mr. Curwarden. "He said, instead of trying to extend it, you had better try to bend it a little more, and that will humour the flexor tendor, and by only getting it so far bent that the proximel end of the phalanx is raised up you will have it in."

Lecture 30 embraces, in its first part, accidents occurring about the HIP JOINT the largest and in many respects the most important articulation of the body. Contrary to what might be expected from the anatomy of that joint, a dislocation upward and backward, has often happened in Mr. A's. practice. The round head of the bone generally turns towards the sacrum, and can be felt on the dorsum of the ilium. The limb is shortened, and the toes turned in. Sometimes the bone remains in that position, but in other cases it sinks down into the sacral notch. In both instances the process of reduction is the same.

"You have nothing to do but to pull the knee with the thigh bent at a half right angle upon the pelvis, then the head of the bone will come down below the acetabulum, and having got it there, it generally slips into the socket. You cannot pull it over the acetabulum; you cannot pull it over the great ridge that is there, but you bring it

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down where the bone has no great use in it, for there is below the acetabulum a groove, between the acetabulum and the tuberosity of the *ischium*, in which the *obturator* moves, and it is along this groove, provided you pull at the angle specified, the bone will come, and when it gets below the brim of the acetabulum, it slips in."—p. 28.

The dislocation, occasionally, is inwards, when the toes are turned in the opposite direction. The method of reduction is the same.

When the bone is dislocated downwards, its head is lodged in the obturator foramen, the limb is elongated, and the toes are generally inverted:

"Then what is to be done in this dislocation? Why, to be sure, a man who sets himself to pull at the leg, would be pulling it further from the socket. You would perhaps say, pushing would be the best thing to be done; but you cannot push it over the brim of the acetabulum. Well, this can only be reduced by making a lever of the dislocated bone, applying a prop at the head of it, and a power at the other end; and thus wou,d you lift it into the socket."—p. 30.

It may happen that the dislocation is directly upwards, when the thigh is shortened and cannot be bent:

"Well, then, you are to pull it down into the socket, you are to extend it, and if you depress the head of the thigh bone, making a sort of lever of it, that would be a very considerable auxiliary in the reduction. However, it may be brought down by simply pulling; but a little pressure at the one end, with a sort of lever at the other, would very considerably tend to assist it."—p. 31.

Fractures of the long neck of this bone may be confounded with its dislocations, except that in the obturator foramen, from which they may always be distinguished by the shortening of the limb.

"Sometimes the bend and neck of the thigh bone split, and the thigh bone gets wedged in between them. The cases are therefore often complicated. That splitting of the neck of the thigh bone is not at all uncommon; but when the fracture is on the outside of the *articular ligament*, the bone may crack, and be simply cracked, where the neck of the thigh bone is joined on to the body of the bone, and there may be very little suppuration between the parts, but the patient is unable to go one step forward. I have heard of cases where they have walked, but then it must have been cases, I am sure,

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of the neck of the thigh bone having been wedged into the body of the bone, not where it is simply cracked, because where it is simply cracked, I am sure they would never bear on their legs to get one step forward."—p. 31.

"I would treat the fracture of the *neck* of the thigh bone as I would treat a fracture in any other part of the bone, and lay them on their side. If a person can be fairly laid on the side, and a splint put on the bone, so that the weight is supported by its own gravitation, then that will do. The rule is, that every longitudinal inch should press equally on the splint, so that you should be able to take up the limb, and carry it about on the splint as if upon a tray. Well, you have to put a counter splint. In the fracture of the neck of the thigh bone, where there is a counter splint, why the pressure of the pelvis on the head of the thigh bone keeps the bone steady, and causes it to press against the part which is broken. But all half measures are bad. I do assure you, I tell you no lie when I tell you that I have attended many cases where there have been fracture of the neck of the thigh bone, and where people have gone about without the possibility of knowing that ever there had been such a fracture; but all half measures are bad. You must therefore turn them fairly upon the side. And how are they able to go to sleep without moving? Why, by lying fairly on their side, the gravitation fixes them in that position; attend to the points of the pelvis, and I am sure they will never move. For my own part, I have no objection to people lying on a soft feather bed. All the trouble I have with the patients is for the first dozen hours, in watching them that they do not move; and if they are laid on a feather bed, they get sunk and fixed in that feather bed in such a way, as that out of it they cannot move afterwards. Well, that is all I wish you to attend to on that point."—p. 34.

Mr. A. has known the neck of the thigh bone fractured after it was dislocated upon the dorsum of the ilium. This is a bad case. On removing the extending power, the limb is immediately shortened; and again great decripitude is the almost inevitable result. In such a case we should be disposed to employ extension for many weeks, keeping the upper end of the bone as near as possible, beneath the acetabulum. Some species of artificial joint would perhaps be thus formed.

Diseases of the Hip joint. Inflammation of a common kind may establish itself in the hip joint, and eventuate in suppuration. Such a case is often confounded with lumbar abscess; but may be distinguished from that malady by the limp of the patient, and the soreness which he feels on pressure about the acetabulum. The treatment consists in per-

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fect rest, low diet, successive doses of Calomel, leeching, and, after the soreness has abated, the application of a blister. Many cases of this kind call, however, for general bloodletting. With respect to rest, it is all important, and when the patient cannot otherwise be induced to keep the limb still, a splint should be so applied, to prevent all motion in the joint. Of blisters, it may be observed, that they are often applied so early in the disease, as to do harm instead of good. In the event of a profuse discharge of matter, on opening an abscess of this kind, it is necessary to administer Bark and Opium, as in all similar cases.

So much for idiopathic inflammation of the joint. But it is often diseased in consequence of an unhealthy state of the constitution. In such cases rest is not so indispensible, and the patient should be allowed to walk about on crutches that his general health may be improved; he should not, however, bear weight upon the affected limb. In these cases, leeches and blisters generally do harm. The disordered state of the constitution must be corrected by appropriate means, and the joint simply fomented with tepid water.

But the hip joint is liable to a much more formidable disease, denominated in some of the books *ischias*. It is of a scrophulous nature, and commences in the ends of the bone or in the acetabulum, or both. The bony parts become light and spongy, they ulcerate, and the head and neck of the os femoris are progressively absorbed; suppuration often happens round the joint; and, finally, in many cases, anchylosis takes place. This is a "horrible disease," and does not, in general, terminate, so that the patient can walk, under three years. On the subject of its treatment our author observes:

"Now I am convinced that a great deal of good may be done, and the good to be done is in keeping the part quiet, repressing all inflammatory action, instituting counter-irritation, and taking care that the counter-irritation does not disturb the health of the patient. And if ever there should be a fit of inflammatory action coming on, the patient should immediately be laid in bed, the peas taken out again, or beads, or whatever you may have put in to cause the irritation; and nothing but soothing treatment encouraged. You must not produce irritable action, while the internal disease is inflammatory.

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To suppose that all cases will do well, is to suppose an absurdity. To suppose that those cases will do well in a hospital, is to suppose an absurdity; for the air will not admit of it, with regard to the patient's general health. But many of such cases will do well."—pp. 46–47.

When anchylosis is about to take place, it is of great importance to keep the limb extended, and the toes directed forward. When it is flexed upon the pelvis, the patient is of course subjected to great inconvenience. It was in this case that our intrepid countryman, Dr. Rhea Barton, projected and successfully executed the operation of sawing through the neck of the bone, so as to form an artificial joint; a full account of which was published in our journal of last year. Of this operation, which does honor to American Surgery, Mr. Abernethy says nothing.

Dislocations of the Knee joints, being comparatively simple in their treatment, we shall pass by, with a single extract on the necessity of keeping the limb extended:

"As in the knee, so in the *elbow-joint*. The great object is to keep them straight. In either of these joints, where the motion is likely to be imperfect after the injury heals, it is most important to keep the limb extended."—p. 48.

In this sentence there is either an oversight or a misprint. No Surgeon would advise the elbow joint to be kept straight, when anchylosis was about to occur. This would, indeed, be in express violation of our author's own instructions. Thus at p. 19 he observes:

"In all accidents occurring about the *elbow-joint*, where it is likely to be attended with some inconvenience or defect afterwards, it is a great objecct to have the fore-arm bent, because, if it is not, the fore-arm remains extended, and he cannot apply the hand to any part of his person, nor can he even feed himself; so that one would attempt to reduce it after a considerable period of time."—

In injuries of the knee joint, the condyles are liable to be fractured obliquely, and even twisted out of place. These are vexatious cases. It is difficult either to restore or preserve the part in its proper situation. The leg must be extended, kept still and the inflammation kept down.

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In treating FRACTURES of the LEG, Mr. A. inclines to the practice of Pott, or the half bent position of the limb; though in oblique fractures he would, in imitation of Hunter, keep the limb extended.

"You will know when you have set the patient's leg right, by attending to the *spine* of the tibia and the *skin;* for granting it was wrong, if it was laid in a horizontal situation, you would ascertain it by tracing the spine; if in a contrary direction, by tracing the skin. Now, you may laugh at all this, and it would be a most unimportant remark indeed, if it did not happen that a bandy-legged man broke his leg. If he broke his leg, and you were to put it straight, you will just put it wrong. I remember a bandy-legged man once in that situation; notwithstanding all the pain the surgeon was putting him to, he smiled and said, 'Sir, I think you are putting my leg straight, and, if you are, that is what I never remember its being before!'"—p. 49.

We have heard an anecdote still more in point. It was told, if we are not mistaken, by the venerable Dr. Worthington, of the District of Columbia. When a young physician, the Doctor, in a country excursion, stopped at a tavern, where a "Dutch Doctor" was engaged in setting the leg of a "bandy shinned" countryman. When the apparatus was applied, and the leg made *quite straight*, the self complaisant and self taught Surgeon, exclaimed—*Daer! it pe'sk petter dan it wash pefore.*

ACCIDENTS about the ANKLE JOINT are of frequent occurrence and deserve most attentive consideration. Few injuries are more common than A SPRAINED ANKLE, in which the ligaments are stretched, and sooner or later, may become inflamed, and the inflammation may involve all the surrounding soft parts. In many cases however, it happens with this joint, as with the knee and hip, that no inflammation comes on, and the parts remain weak and relaxed. This is the fault of the constitution, which must be corrected, and strengthened, before the injured parts will recover. The cure is always slow, and sometimes is never perfect, a feeling of weakness remaining throughout the patients life. In such cases it is improper, or, at least useless, to make many applications to the affected part. Cooling washes, leeches, and blisters all do harm. Rest, friction with the hand, and a roller carried from the

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lower extremity of the limb upwards, are all that can be done to the part affected with advantage. In persons of a feeble constitution, and nervous temperament, these accidents are often followed by a great aggravation of those morbid states, and we have met with few conditions of the system more unmanageable. Even when the constitution is healthy, a sprain is not followed by immediate inflammation. The parts are stunned and weakened, and, under such circumstances, the practice of applying cold or evaporating washes, is extremely ungrateful to the patient, and actually injurious. *Hot* water is then, one of the best applications, or hot stimulating lotions. The limb should be kept on a level with the pelvis; and, if the pulse be weak, or the patient chilly, he should take a draught of hot spirit and water, or a dose of laudanum. When inflammation supervenes, and the heat begins to rise, the parts should be perpetually bathed with tepid, or cool, but not cold water, and the most perfect rest injoined.

But to return to our author. The most common DISLOCATION of the ankle, is that which presents the foot turned outwards, the tibia thrown inwards from the astragalus and os-calcis, and the weight of the body made to rest upon the fibula. The interosseous ligament is sometimes torn, and the fibula often fractured, about three inches from its lower end. The integuments round the outer ankle are often pinched between the bones, while those of the inner ankle are lacerated, constituting a compound dislocation. These are most serious accidents, we mean the last, and the custom once was to resort to immediate amputation. Against this practice, our author enters an energetic protest. The parts should be replaced, care being taken to disengage the integuments from between the bones, the wound should be closed with sticking plaster, and then varnished over, the limb should be raised, and the joint kept constantly sponged. General bloodletting will not often in Mr. A's. opinion be proper. The inflammation generally subsides in four or five days; but sometimes large abscesses form about the joint, which should be opened as soon as a fluctuation is

under the fasciæ. If the patient is not likely to do well, amputation may be resorted to at any time.

It often happens, after injuries of the ankle joint, that the weight of the body does not fall over the centre of the plantar arch, but inwardly; and in some persons, there is a certain degree of congenital malformation of this kind in both ankles. It causes the knees to approach each other, and such persons are called "knock-kneed." Much may be done to remedy this deformity, by the patient himself. The inner quarter of his shoes ought to be made high and stiff; in walking and standing, he should not turn out his toes; and in placing his foot, should bring down its outer edge as firmly as possible. Mr. A. is of opinion that irons are rarely of any benefit in these cases.

Of other dislocations of the ankle joint, and injuries of the foot, our author says but little, and that little we shall not analyse; but conclude this branch of the subject with a reference to the ISCHURIA, which, according to his experience, is a frequent consequence of injuries of the foot and leg. In this affection, it is improper, in his opinion, to resort to the Catheter, which by its irritation is apt to keep up the suppression. It is only necessary to administer a mild cathartic and apply leeches to the perineum, when the urine will pass freely.

We now leave the skeleton and its diseases, for the muscles, chiefly of the trunk of the body, to which Mr. A. has devoted the greater part of his 31st, 32d and 33d lectures. His descriptions are not given, but the reader is presented with many edifying and amusing remarks, on the relations between Myology and Surgery. Without attempting to analyse that which is already in a state of disintegration, we cannot resist the inclination to transcribe a few specimens.

"Now, a knowledge of this opening (the abdominal ring) I hold to be a very important point. Ruptures are often taking place there; and what would you think of a surgeon who would take hold of a rupture in this place, and who would use all his might to push it through the very walls of the belly, into the belly itself. Then it is

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important to know how to find that aperture; and you may always know that, if you recollect these anatomical facts. I will venture to say, there is no subject so fat, that you cannot distinguish the angles of the pubes, and the jutting parts to be found there; then, knowing that, by poking your finger along the bones, near to the angle, push it a little upwards, and then it goes into the the abdominal ring. Let the skin be off or on, and I do the same thing with my finger. Now here I begin to say, what I shall often repeat, I dare say—that it is really necessary, as far as I am capable of determining, for gentlemen to come to London, or some large school, where they may have opportunities of dissecting and understanding the structure of the body. But there is a great deal of anatomy, and the very best part of anatomy, for *practical* purposes, that you may always remember without a subject, by recollecting that you continually carry about with you a subject in your own persons; and I hope you will all put your fingers into your abdominal rings, and learn for yourselves. And if you reduce a hernia by piecemeal, poking it in, bit by bit, in this aperture, then that is the mode of proceeding."—pp. 63–64.

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"Then, as to wry necks in general, they are the result of the irregular action of muscles; and many muscles are concerned in the production of the wry neck. Now in those cases of wry neck which result from the irregular action of muscles, if the sterno-cleido-mastoideus be chiefly affected, what is to be done? Why, you must endeavour to tranquilize the muscles. There are many of those cases entirely the result of a disturbed state of nerves, as I believe, caused by disordered digestive organs. And whether this be universally the case or not, I will tell you of one absolute undoubted instance of it. This happened in a tall boy, at school. He was seized with a wry neck. They leeched him, and blistered him, and made bad worse, and, after a week, he was sent up to town. I say he was a tall, lank boy; and upon my life, I thought a *pullet's* neck could not have been more twisted round than his was; that, you know, admits of a particular turn from the mechanism of the vertebræ of the neck, in order to let the fowl put its head under its wing to sleep. But so much was this boy's neck twisted, that I told him to lie on a sofa, or couch, or bed, and to support the head with pillows; never to sit upright; never to put the head in a position to demand muscular action for support, since, if the muscles did act, they would act in this faulty manner. I told him to foment his neck by flannels; to keep it in a kind of tepid bath; to keep himself in a kind of perspiration; and I applied the whole of my attention to put his digestive organs to rights. His bowels were all wrong—his tongue furred, and of a bad colour. A week elapsed, and his stomach and bowels got into a decent state, and his wry neck was entirely gone. But you see if this is neglected in the outset, then muscles get a habit of perverse action, and you have wry necks established beyond removal, even when the diges-

tives are put to rights, though that I believe to be a most direct and efficient mode of cure in every instance. But I know that there are cases of wry neck, where people have their necks twisted, and the muscles put into such an irritable state of action, that the cases do not yield quickly, even to what I should consider the most judicious and appropriate treatment. But, now, in reading books of surgery, you find the proposition of dividing the sterno-cleido-mastoideus muscle, in order to set people's heads right on their shoulders. Now, for a very great part of my life, I did not know what those people meant by this. I never could meet with a case where such an operation could for a moment have been rationally thought of. Then, as curious cases are something like misfortunes, that is, they never come alone, in one year I met with *four* cases requiring an operation in the sterno-cleido-mastoideus. All these cases appeared to me to be of the same nature. I mean to say, it appeared to me that the muscle was originally mal-formed; that the clavicular part of the muscle was shorter than it should have been. It was irritable, anddrew the mastoid process towards the collar-bone. And note the consequence. The people—children they were, for they were not more than fifteen or sixteen years of age—had all grown awry in their backs. The vertebral column had become completely deformed. And it is natural to suppose that that would be the case, for if any thing oblige a man's head to lie pretty much in contact with his shoulder, he is under the necessity of bending the vertebræ of the loins to the opposite side, in order to support the gravity of his head perpendicularly upon the *sacrum*. The inversion of one vertebræ, creates the necessity for another inversion. I made a longitudinal incision in the sternal portion of the muscle, cut it fairly through, and up started the head perpendicularly upon the neck. I did not touch the clavicular portion of the muscle at all; that did not seem to be at all faulty, and when the clavicular portion was set right, all seemed right. And I have great satisfaction in informing you that these children became straight in their backs. Now that is a very curious thing, that the curvatures of their spines became involved without any mechanism. In one of the children, indeed, a second contraction took place after about a year and a half. I shall not stop now to explain the process—that is explained in the surgical Lectures—but I divided it a second time, resolved that the child should grow up to its full stature without deformity of the vertebral column. I have seen several cases since; and there was a student here who chose to have the operation done on his neck; not that it was in any considerable degree deformed. He would have done very well for a *courtier* in the court of Alexander the Great, where it was the fashion, in imitation of their monarch, to walk with their heads a little twisted. But however, he chose to have it done, and done it was, and with a very satisfactory result to him. He then could do with his head what he could not have done before."—pp. 76–78.

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"*Deltoid Muscle.*—If there is any part that surgeons should be acquainted with, it is the gap between the deltoid, and the clavicular portion of the pectoral muscles. I put my finger into that gap in my own person, and I stop the beating of the pulse at the wrist. Suppose a man has got a bleeding in his arm, which there is a difficulty in stopping, how are you, as a surgeon, to stop it? By passing your finger over the first and second ribs, pressing the artery, and you stop it at once. When I talk about this sort of thing, and hear a medical man say he cannot do it, I always say, there are others that can. And I tell this story of a lady who was examined by a great number of learned doctors. They could not tell what was the matter with her; they had never met with such an intermittent pulse in the whole course of their lives, nor any thing at all to equal it, and they pronounced their opinion that she could not live a moment, and left the room; and all this time she was tweedling with this artery at the shoulder."—pp. 82–83.

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"*Orbicularis Palpebrarum.*—The tendon of the orbicularis palpebrarum is very important; the knowledge of its situation is what gives you the power of opening the *lachrymal bag* with the greatest facility. The knowledge of its situation is what gives you the power of performing the operation for the *fistula lachrymalis* without the slightest difficulty. You put a knife below the orbicular palpebrarum, keep it within the ridge of the orbit, and where does it go? Into the lachrymal groove, and you carry it on till you can carry it no further, for it is resisted by bone. You divide the bag, put the probe down into the nose, clear away any obstruction that may be there, and you will find that your probe rests upon the nasal process of the superior maxillary bone."—pp. 89–90.

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"Now I will just say, with respect to *system*, that there is a great deal in that. In acquiring a knowledge of any science, system is almost indispensably necessary; but is especially so in the medical profession. With this view, the abdomen is divided into regions; and from want of attending to this, I have known something of this nature occur elsewhere. The examiner has asked a young gentleman who presented himself for examination, 'What do you see upon opening the abdomen?' The chap has stared, and looked aghast, and stuttered out, 'wh—wh—wh—what—what do I see, sir?' 'Ay?' 'Why, th—there's—there's the liver, sir.' 'Well?' 'An—an—and there's the stomach, sir. An—an—an—and—and there's—there's the spleen, Sir. And there's the cœcum, sir.' Now, then, just let me tell you, that you will do well to proceed systematically and to pack up your knowledge as you go along, in such order, that when you are asked for it, you will at once know where to find it."—p. 83.

The latter part of lecture 33, is on the Anatomy and Physiology of the EYE, in which we find nothing particularly de-

serving of notice: we shall, however, present to our readers the closing paragraph.

"And now I have done. I have told you of all the circumstances —of all the artifices which Nature has employed for lubricating the front of the eye-ball, and keeping it continually transparent. In no other part of the body have you such a series of contrivances, the uses of which you so well understand. Every thing seems required, and every thing required is met with, and every thing met with seems to be admirably adapted to its function; so that I cannot but think that the lachrymal parts of the eye may serve as an instance of the effects of a Designing Cause, operating in the formation of Nature's works."—p. 109.

We come now to the viscera. Lecture 34, opens with the Anatomy and Physiology of the STOMACH. It presents nothing new; and, except the last paragraph, nothing which deserves to be transferred to our pages. Of the reality of what it sets forth, few persons can entertain a doubt.

"For my own part, I can see no permanent source of strength but in digestion. You may give *bark;* ay, and if the stomach will digest it, it will give strength, but I know not how it will give it otherwise. We ought to caution patients, not to take too much exercise after eating, but to keep themselves quiet, and not to allow their minds to be disturbed, for you know the eighth pair of nerves come from the brain to the stomach, and if the mind be agitated and disturbed, will the stomach digest food, or will it even receive it? No; there is a great sympathy between the mind and the stomach. If a man has received some intelligence which really distressed or annoyed him—thoroughly distressed him; if a merchant heard of the loss of a great adventure at sea; if a surgeon heard that a patient of his had died in whose fate he had taken great interest, who he thought would have recovered, and by whose recovery he would have had credit secured to himself; or, if a lover heard that his mistress had cheated him just at the time he was sitting down to dinner, would he eat his dinner do you think? Oh! no; or if he heard of the tidings just after he had dined, would what he had taken digest? Oh! no. Well, to secrete, there must be vital actions regulated by the nervous system; and, in every part of the physical body you will see that fact proved. Now I go on. The food is digested, but what does it become! Not chyle in the stomach, but a kind of pulpy adhesive sort of matter—sticky sort of matter, of no very pleasant odor. People vomit after they digest their food, when they have had a blow on the head; and what are we to call that? It is generally called chyme. I may inform you, that there have been opinions entertained, that the right end of the stomach is better calculated for

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solid food, and the left for the fluid. But these are things, I believe, concerning which we have no absolute knowledge; and, therefore, we are ignorant of them."—pp. 114–115.

Then follows an account of the intestines, in which likewise, we discover nothing novel.

Having spoken of the alimentary canal in its healthy state, our author proceeds to treat of its MORBID ANATOMY: under three distinct heads,—Læsions of the *peritoneal coat* of the *mucous lining* and of the *intermediate tunic*.

Peritoneal coat. This part is the seat of inflammation, both acute and chronic. The latter may endure for a long time, and gradually occasion two kinds of effusion—serous and fibrinous—one constituting ascites, the other cementing the organs to one another.

"The *viscera* are all united together; sometimes there is no cavity at all; sometimes in trying to separate the viscera I have torn the bowels asunder without separating them; the peritoneum every where rough and thick, parts adhering, and the vacancies between those parts filled with fluid and tubercles, the peritoneum studded with tubercles."—p. 122.

Mucous coat. This membrane, is liable to ulceration, and the ulcers often eat through the other tunics; but it rarely happens that an aperture is formed, so that the contents of the tube can escape, for when the inflammation extends to the peritoneal covering, adhesion of the part to a contiguous intestine, or to the walls of the abdomen, is apt to take place. Ulceration may occur in the stomach, the great intestines and the small intestines, but it is most frequent in the last.

Intermediate parts. These are subject to a scirrhus induration and thickening, the other coats remaining entire. Ulceration sometimes takes place. The pylorus is especially liable to such affections. The alimentary canal, like all the other mucous canals, is liable to strictures; some of which are cancerous, others not. They may occur in any part, but are most common in the *rectum*, which in all cases of obstinate constipation, should be examined with the finger. All parts of the canal may experience intus-susception, from

irregular and spasmodic action, and large portions are sometimes separated by mortification, and discharged. The extent of involved bowel, is now and then very great. A case has been known, in which the valve of the cæcum has presented at the annus.

Lecture 35, is on the LIVER, GALL BLADDER, AND GALL STONES. Our author sets out by remarking on the common opinion, that the bile is secreted from the blood of the vena portæ, and seems to concur in the theory; but he has seen a case in which the blood returned from the intestines, went directly to the vena cava, near the emulgent veins, and still, the liver secreted real bile. The hepatic artery was one third larger than usual. Hence it follows, that bile *may* be secreted from *arterial* blood. He seems disposed to advance the opinion, that the secretion of bile, from venous blood, is a mere economical provision. We can scarcely doubt, however, that as it respects the blood of the general system, and especially of the abdominal viscera, the bile is an excrementitious fluid. That it is made to perform a function *in the* intestinal canal, is no objection to this view of the subject. We think, therefore, that although this fluid has been secreted from arterial blood, its proper source, is that which is returned from the stomach and bowels. This blood we have little doubt, in reality, differs from the other blood of the body, in having matters blended with it by absorption from the stomach, which it is necessary to the welfare of the system, should be eliminated.

Our author's remarks on the composition of the bile, present nothing deserving of particular notice. He is a believer in the contractility of the gall bladder. On the sympathies of the liver, through the instrumentality of the nervous system, he speaks briefly and pertinently; but *all* the injuries to the general system, which hepatic diseases occasion, is not through the medium of the nerves. Retention in the blood, of that which ought to be separated from it in the liver, undoubtedly gives rise to a part of the mischief, and is perhaps a main cause of the depression of spirts, and the distressing nervous irritation which attends hepatic diseases.

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From his observations on the morbid anatomy of the liver, we extract the following paragraphs:—

"*Morbid Structure.*—So much with respect to physiology; and next, with regard to morbid structure. Here I get over the ground rather lightly, for there are certain organs in the body, which, if the vessels go into a state of diseased action, they seem to me to produce but one, or scarcely any thing else but one kind of morbid structure; it is an infusion of something into the interstitial parts, in larger or smaller masses, and this we call *tubercles*. The liver is diseased—it is tubercular. There are divers specimens of this sort of disease; sometimes the tubercles are very large, and sometimes they are very small. But what is it that is deposited in the interstices? I am ready to grant, that the newly formed matter may be so newly laid down, as to give a solidity to the whole mass, and that is *scirrhus*, not cancerous scirrhus, but a solid state of the liver. It is, however, generally in masses, so as to constitute tubercles. Now here is a liver [*presenting a large preparation*] where the tubercles are distinctly shown; they are very large tubercles. I am accustomed to introduce this preparation by saying, it is a very small slice off a large liver; for positively the patient from whom it was taken, had the whole of the abdominal cavity filled up with the liver; it went down even into the pelvis. Before her death, some speculated about the nature of this large hard substance. Some thought it arose out of the pelvis, and went up to the hypocondrium; and others thought that it proceeded from the hypochondrium down into the pelvis; I thought with the latter class. But what was astonishing, was, that the patient never had any symptom of a diseased liver. There was no sickness, nor any thing that may be generally observed, as indicating disease of the liver. But you are to understand that these tubercles, to use the language of Mr. Hunter, may be considered rather as disease *in* a part, than *of* a part, for in this state the internal parts of the liver will secrete bile; and it does happen, that very diseased livers will sometimes secrete very good bile; I have known it repeatedly.

Then, with regard to these tubercles, the question is, are they vascular? And that is a question we cannot determine; there are vessels going through them, but whether they are vascular or not, we cannot tell. This relates to the tubercles of the liver and lungs; and in either case, it is notorious that the tubercles *suppurate*. You meet with abscesses there, and those abscesses are, no doubt, suppurated tubercles. I have seen numerous abscesses of this kind, which have discharged half a wash-hand basin full of matter, and yet the patients have recovered and done well, the rest of the liver having been sound; and I have known, as I believe, one tubercle breaking in upon another, abscess after abscess forming, and the matter issuing from the side. I remember a man very well, who was a captain of a ship, and of course, a man who had drunk a great deal of *grog*. He was in that situation, and the disease in the liver communicated

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with his bowels. Now I have seen this. The abscess has been dressed while the patient was lying in bed. A rumbling has taken place in his bowels, air has got into them, puffed them up, and actually blown off the dressing!"—pp. 135–137.

From the liver, our author ascends to the lungs, and discusses with some earnestness, the question of the irritability of the air cells. As this is an inquiry of interest, and the profession are much divided in their opinions, we shall transcribe a considerable part of his reasonings on the subject:

"*Irritability of the Air Cells.*—With regard to their irritability, these air vessels are primarily irritable; and the question is, whether these vessels, which permeate the lungs, are irritable or not? Now who can tell that? It is believed that all the mucous membranes of the body are irritable. I do not believe that any body can demonstrate an irritable mucous membrane in the urethra, and yet that part has been known to be of considerable irritability. Now it has been a question among surgeons and physiologists, as to the irritability of these vessels in the lungs; and you may ask my opinion on the subject, or I may at once tell you, that I have no doubt of the air vessels of the lungs being irritable. What is to be our guide? Our senses are insufficient to inform us; why then, observation of course must. Ordinarily, respiration may be said to be a mechanical process. We enlarge the capacity of the chest by the *intercostal muscles*, and the air is forced into the lungs. We diminish the chest, and the air is forced out of the lungs, just as if you were using a pair of bellows. Ordinarily, respiration is carried on merely as a mechanical process; but, extraordinarily, do we not find manifestations that air cannot get into the lungs, though we do endeavor to enlarge the chest? You know you never could lift up the board of the bellows, if you were to stop up the holes that admit the air—and why? On account of the immense weight of the atmosphere. Just so, if you were to put a rope round a man's neck, and stop the air from entering into the trachea. It is not the strongest man that ever lived that could afterwards enlarge that man's chest; to do that, would be to lift up an immense load of air. A man having irritable lungs, may be sitting comfortably enough at the fire-side, but a little smoke comes into the room, and he can breathe no more; he gasps for breath—he cannot enlarge the chest, and he finds the utmost difficulty in respiring. But where is the difficulty? Where is the sensation of pain and contraction? Why, in the lungs themselves; the hindrance is there; I believe it is all irritability."—pp. 139–140.

On the following page, he expresses the conviction, that asthmatic breathing is generally dependent on disorder in the digestive organs; in evidence of which, we ourselves have

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met with many striking cases. Hence, in part, the great palliative influence of emetics in the early stages of asthma. But why does not gastric disease produce pulmonary irritation in all? This can only be attributed to a difference in the vital properties or organization of the lungs, by which in some persons, they are proof against disorders of the stomach, while in others, from an unhealthy disposition, they readily take on sympathetic action. Now emetics exert a decided influence on the pneumatic system, and hence, in part, the benefits which are derived from this class of medicines, in these gastro-pulmonary maladies.

His observations on the physiology of the lungs, embracing their connexion with the heart, and the production of animal heat, are in the main correct; but offering nothing new, we shall pass them by, to speak

Of the Heart. Devoting a couple of pages to its *malformations*, he proceeds to treat of its *morbid anatomy*. In the many cases of extreme dropsy in the pericardium, that he has met with, he has constantly found "a very small and very quick pulse." When treating of the morbid appearances produced by *pericarditis*, he takes occasion to mention the phenomena of that disease, as he has observed them in his own practice; and although in a late number, we have given a history of them from Lænnec, we are tempted to transcribe what our author has seen:—

"*Symptoms.*—Now I have always, in this Lecture, conceived some account of the symptoms which I myself have known in cases of pericarditis, useful to be mentioned. Many a man feels a pain in the heart, when there is no disease there; but I never knew any one who was labouring under an inflammation of the heart who complained of pain in the part actually affected. They either did not complain of pain at all, or referred it to some other part, not in the region of the heart. I have known them complain of pain in the region of the liver. But in those cases of acute pericarditis, it is not to be supposed that the disease which affects the heart will not affect the flesh of the heart, and will not render it irritable. I have known it to be extremely irritable, having the greatest pain, acting with the greatest force, and then, as if exhausted, it has gone on with its function in a very slow manner. Now, in describing this pericarditis, I tell the case of a physician, who had come from the East Indies, and that perhaps might have tended to mislead the minds of his medical

advisers, for he died, and they really knew not what the nature of his disease was; but yet it was distinguished by this peculiar symptom that I am describing. He referred his pain to the region of the liver, as if immediately coming from the liver. He was treated as if he suffered from hepatic affection merely; but the most curious circumstance was, that at one time his pulse would beat so quickly as not to be numbered, and that then it would become exceedingly slow. Really, towards the last period of his life, his attendants have gone out of the room, not liking to witness his last agonies, feeling certain, that from the state of his pulse, he could not survive many minutes; and returning into the room again, they have found him in a languid state, with a pulse beating very low indeed, perhaps not more than forty in a minute; just as if the heart was thrown into fits of irritability, in which fits it would act with the utmost vehemence, till it became exhausted, and then carry on its functions, as I have expressed it, in a very languid manner."—pp. 154–155.

His remarks on the morbid anatomy of the muscular substance and valves of the heart, we shall not analyse, as presenting nothing with which the Profession is not familiar; and shall finish what relates to that organ, with an extract on its sympathetic affections:

"*Sympathy.*—With regard to *sympathetic affections*, an organ may be made very irritable and fidgetty from sympathy with another organ, and the sympathetically affected organ may be getting into the worst state of the two. Now I am convinced that disorder of the digestive organs will materially disturb the heart. In short, there are two sets of organs with which I say the heart peculiarly sympathizes; the one is, the *head*, and the other the *alimentary organs*. Of how it is caused by the *cerebral* affection, I have already told you; I am now speaking to you upon the other. But if an organ is kept in a state of irritation, it will go into disease; it will lead to disease—to *organic disease*. These words seem to be objected to by medical men; and then they say, there is *functional* disease which leads to *structural* disease.

Well, then I say, we must endeavor to relieve this functional disease; and that which leads to structural disease in the heart may be liable to lead to rheumatism in other parts. I can only tell you, I have had, all my lifetime, one of the most irritable hearts possible; and sometimes I have thought I should die, just as John Hunter did, of an affection of the heart; but that was, perhaps, only a hypochondriacal feeling. I remember when I was young, that my heart used to beat at such a rate, as to make me think that I had an aneurism. It did not get worse, but it was always worse after dinner. However, by degrees I ceased to think about it, and perhaps it diminished—perhaps it did. I was first reminded of this again, by

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being excessively distressed and annoyed from attending upon a patient who died. When I laid down in bed of a night, my heart intermitted to such an extent, that I thought it never would beat again. Then it would go on with the utmost vehemence for a time, but as the anxiety of my mind subsided, so this state went off. Then I was next reminded, that my heart might put my stomach out of its order, from my own observations; then my heart was at its vagaries again. I have known it to beat 160 in one minute, and not 60 in the next, intermitting in the strangest way possible. However, my stomach was wrong, and being interested, as you may be inclined to suppose, in this case, I resolved to consult a physician. I let him feel my pulse, and he said, 'You have got a touch of *angina pectoris*.' Well, but, said I, telling me what I have got, is not of so much consequence as telling me what I am to do. He said, 'You are not to take wine—you are not to take this, that, and the other thing,' all which I attended to. I was extremely hypochondriacal. He recommended me to sleep in the country. I did so; and I remember once, just by the friction of my shirt, I had produced a large blister over my heart, and when I was stripped, I found my shirt all over serum and blood. Now this irritability I have known in many other cases, and I felt, personally, that relief from taking the *blue pill*, which I never could have believed could have been produced, had I not felt it. An *Irishman* once said to me, 'Oh! sir, I shall be bound to pray for you as long as I live, and *ever afterwards*. I declare to God, before I took those pills, I was in that state which I should have been thankful to any body who would have come and blown my brains out; but ever since I took them, I have been happy.'"—pp. 161–163.

Leaving this organ, he returns to the pulmonary, and treats of the physiology of the voice, and of the morbid anatomy of the lungs:

"This is one of the organs in which, when diseased action is produced, the disease is tubercular, as in the liver and spleen. I know the matter may not be aggravated, it may be diffused, it may make a sort of solid substance, but it is tubercular. This is what we call a consumption—tubercles in the lungs. Now these tubercles are of various kinds and various sizes; they are of all sizes and diversities of texture, according to the constitution. Then we may question whether these break into the lungs. You have them larger or smaller. Sometimes tubercles are organized or not? We know that they suppurate and a great deal of matter is spit up after the tubercles break; and this is the state of the lungs in those who die consumptive. Certain it is, you do see abscesses in lungs not tubercular."—p. 168.

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"Now, with regard to the lungs, what can produce an irritable disease of pulmonary irritation? I am very well convinced, that ste-

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primary state of the disease. I know that many gentlemen who have been educated at this hospital, have obtained very considerable credit to themselves, in curing or relieving some consumptive people by putting their stomachs to rights."—p. 169.

That many cases of consumption are of dyspeptic origin, we have no doubt; but many more appear to us to be primary affections of the pulmonary organ, and unsusceptible of being cured by remedies addressed to the stomach and liver, or indeed by any known means.

On the value of morbid anatomy, generally, he holds a sentiment from which we are little inclined to dissent:

"This morbid anatomy, which people dread so much, does not appear to me to be of primary importance in the study of our profession, there is such a great diversity of appearances; but organs of certain construction are liable to certain diseases, and those are easily recognised. The grand thing to be attended to, is, that what produces a state of irritation, and brings on a state of vascular action, will cause those diseases."—p. 169.

The 37th Lecture treats of the ABSORBENT VESSELS AND GLANDS. These vessels are exceedingly similar to veins. They anastomose very much with each other, in which Mr. A. sees a great good, as their contents, drawn from the different tissues of the body, are thus commingled before they reach the blood. He believes, moreover, with Hunter, that these vessels, as well as the other vessels of the body, exert a modifying influence on their contents. The glands are exceedingly vascular, that is, supplied with arteries and veins. It is uncertain whether they are cellular, or composed chiefly of absorbent vessels, rolled upon each other. It was for a long time supposed, that the brain was destitute of these vessels; but the Italian anatomists Morgani and Mascagni assert, that they have injected them in that organ, we believe, however, that they are but few in number. The following pathological remarks seem worthy of being remembered:

"Now, then, the superficial absorbents of the thigh come to the groin, under a number of glands that are situated about Poupart's ligaments. They are generally five in number, and are arranged, as

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it were, into two rows, one row above the ligament and one row below it. These are the glands in the groin which are so often diseased. There is an *inguinal phalanx*, as they call it, and a *femoral phalanx*, and this is said to deserve the attention of the surgeon, inasmuch as it may denote the cause of disease. If, for instance, you have one of the glands of the inguinal phalanx diseased, you may suppose it arises from irritation in the genitals, in the testicles, and so on; but if it be in the lower row, it may arise from ulcers in the leg. Often where there is tumefaction in the leg do you find disease in this part. Often when my opinion has been asked about a swelling in the groin of a lad, suspected to be bubo, I have found it to be in the lower row, and then I have said immediately, no, it is not a bubo. Upon an examination I have found that the lad had some irritation, or sore about his heel, which had communicated irritation to these glands."—p. 180.

Mr. A. discusses the subject of venous adsorption, and comes to the conclusion, that it does not exist. We must say, however, that his facts and reasonings, do not in our opinion settle this controverted point, or even clear up any of the difficulties that surround it. His attempt to explain away the experiment of Majendie, who killed an animal by introducing poison into a limb, separated from the body except by the columns of blood, will not be regarded as successful. Concerning absorption itself, his opinion that we are ignorant of the mode, will be more generally received.

The next lecture opens with the KIDNEY and the secretion and composition of URINE, relative to which, he is so far behind Prout and some other writers, that we shall not dwell upon them. In regard to *diabetes mellitus* he is a disciple of Rollo.

From the kidney our author proceeds by a natural anatomical transition to treat of the female *organia genetalia*, to which he devotes forty pages; but the great length to which our analysis has already extended, requires us to omit any notice of these lectures.

In the middle of the 39th, with a most unnatural transition, he proceeds to treat of the CRANIUM; relative to which we shall lay before our readers a single practical extract:

"Now, why do we learn all the particulars of the different bones of the head by rote? For the practice of our profession, and with-

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out such learning we could not practice it. Where may you trephine? Draw a horizontal line three parts above the orbit of the eye, and you may trephine where you list, save and except you may not do it precisely on the middle, because then you would come on the *frontal spine*. If you were to trephine lower down, at the sides, you might penetrate into the orbit of the eye. A person may say, 'Surely I may trephine a little lower than this;' but, I ask, 'Why should you wish it? Are you not almost as low as the bottom of the skull? I say, making general rules, we ought, if we err at all, to err on the side of safety. It is foolish to walk on the very brink of a precipice, if the same good can be effected by keeping at a little distance from it. This, then, is the rule:—*Do not* trephine on the *middle* of the os frontis, for you do not know where this frontal spine, or *crista interna*, is to be found. They say, if the sagittal suture is seen continued down the os frontis, this spine will not be found; but this is not true, for I have seen it in such a scull.

You ought not to trephine over the *arteria meningia media*, if it is possible to avoid it. Neither would a man trephine, so as to open the *longitudinal sinus*, if he could help it. There is such inequality in the bone at this part, that there is great risk in opening it if the trephine is applied here. I know it has been often opened."—p. 239.

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"Now, what can you do *surgically* to the *os occipitis*? You may trephine it on either side of the perpendicular ridge; but if you have any thing to do with the under part, you must cut off a man's neck to get to it. I know there are cases on record, where bones have been taken away, and so on, from this part. But I speak generally; and if I err, I give you admonitions on the side of caution."—p. 241.

Dismissing the bones of the head, our author descends in the same lecture, to the PANCREAS, concerning which he presents us with nothing new, except peradventure it be found in the following case:

"I shall now tell you the history of a cancerous pancreas, and as those histories are not very commonly recorded, I have some satisfaction in doing this, inasmuch as it seems to be elucidating the physiology of the pancreas, and, in a degree, showing that its *function* is not of very grand importance. There was a medical man in London, a most respectable man, a man of considerable knowledge and judgment in his profession, but especially in the *pharmaceutic* department of medicine. He was, in short, a very old, and a very respectable apothecary, known, of course, to all the physicians in this town; and they were at one time very much, I may say, dependant upon such practitioners as I have described, and paid great court to them. I mean to tell you that this man was attended by the best physicians and best physiologists in London, but not a soul got at the

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real nature of his malady. It was not ascertained till he was dead. It was observed that he took aperient medicines out of his own shop at the commencement of his illness. His bowels, therefore, seemed to be in some degree constipated; but that was not wonderful. At the commencement of his illness, he looked ill—I mean like a person that had some serious disease within him. Well, I never saw any one who was in that state, but where it was betrayed in his physiognomy. This is a common observation. I say to patients every day, 'Oh! you will not die yet—you do not look as if you were going to take your departure.' This is a common observation. We go along the streets, and seeing some poor fellow pass us, we say, 'Ah! poor fellow, he has not long to live in this world, I am sure.' However, the individual I allude to, looked as if he had some important disease within him. Nevertheless he ate his food, and I suppose he kept his bowels regular. When the pancreas began to ulcerate, it produced no effect but that of local pain. He complained of pain in the pit of his stomach, which gradually extended in its dimensions; but what was the cause of that pain no one could find out. As it advanced, he was constantly stooping forwards. Towards the latter part of his life he lay in bed, propped up with pillows, to lessen the pressure that might have been made on the pancreas. He still had an appetite, and his bowels were kept regular. He found that when he ate more than he should have done, that that aggravated his pain; so much so, that he learned to relieve himself by poking his finger down his throat, and pushing forward some of the food through the stomach. [His fingers were certainly of an enviable length.] The pressure of the food on the pancreas increased the pain. He also found that a *clyster* relieved him, probably by unloading the *colon*, and lessening the pressure that might previously have taken place on the pancreas. Thus he went on, gradually becoming worse and worse till he died, and then his pancreas was found to be in a horrible state of ulceration from end to end."—pp. 243–245.

Next succeeds the SPLEEN, on the functions of which we shall make an extract:

"*Physiology*.—Now for the physiology of the spleen; and it was known in ancient times that if a man was wounded in the wars, and had his spleen slip out of his belly, it came away, perished, and yet the man did well. Well, upon the revival of philosophical inquiry, Malpighi took away the spleen of a dog, and he has given a history of the proceeding. According to his account, the dog has rather benefitted by the operation than otherwise, or the dog had more appetite, and became more salacious than he was before the operation. When Malpighi had led the way, every person who could get a dog, was cutting out the spleen and publishing the history of the case. Haller has made a general review of the histories of those *unsplenic* dogs, and the summary is just what we would naturally expect it to

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be; namely, that though some of the dogs did well for a time, that they became ill, pined away, and died. This is just what we should naturally expect, because no one could suppose that the spleen was made in vain and for no purpose. Haller thought that they died because they had not got a preparation of bile; for in Haller's time it was thought that all the abdominal viscera were but organs for the preparation of bile—that they wrought a change in the blood, that fitted it for the secretion of bile; and every anatomist has observed that the blood of the splenic vein does not coagulate like the blood of other veins. This is an observation which should be attended to, for we really do not understand the physiology of the spleen. Then Haller, you know, had a theory to support; and, therefore, probably he might consider this as a stronger proof than he otherwise would have done. But the opinion that bile could alone be prepared from venous blood and from the *vena portæ* which contained blood of a peculiar quality, is now, I consider, refuted. Then, why should so large an artery go to the spleen, to have the blood simply to pass through it, without preparing any thing, and to return by the splenic vein? The only rational explanation that has been given of this, is, that if the circulation through the spleen can at any time be impeded, it must throw an abundance of blood into the other branches of the *cælic artery*, so that there would be a most inordinate quantity of blood poured upon the stomach and the *duodenum* at the time digestion was taking place. It is supposed that the pressure of the great end of the stomach upon the spleen must impede the blood through the spleen, and cause it to flow in abundance in those parts where it is most wanted. I say this is the only rational explanation that has been given of it, and also the only solution of the problem of the unsplenic dogs; for if the spleen could be taken out and the wound healed up without injury, then there would be an inordinate quantity of blood thrown to the stomach and other parts; so that Malpighi's dogs might well have a better appetite and be more salacious than before they took leave of their spleen. I say this is the only rational theory, but still it may not be true for all that; and there is one staggering fact which I hear of, which is, that the spleen seems to be largest when the stomach is full. That is a thing I never examined for myself, and I can tell you no more about it. Dr. Haighton took a great deal of pains with this theory, and examined the blood of the splenic vein. He did not find it different from other blood. But he seems to me to have left off where he should have begun. It was his business to have shown that a solid pressure upon the spongy part would impede the circulation; and then to have shown that the stomach was adequate to produce that pressure, which he did not show."—pp. 246–248.

On the subject of the Blood Vessels and Blood, our author adheres so closely to his great master, John Hunter,

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whose work on the same subjects, is, or ought to be, in the hands of every physician, that we shall limit our excerpts to the closing paragraph:

"Now that is all I have to say on the subject, but I must add, that it is a very satisfactory examination, as it shows you that the blood contains the rudiments of all the body. What do you find that the body is composed of, but of *fibres*, some insoluble, and some soluble? All this is to be found in the blood. You have also something in the blood which is susceptible of considerable mutations of color, and you see such mutations take place throughout all the body. I say, we know but little, but that there is a sort of satisfactory conclusion come to from what we do know."—p. 261.

To the vessels and blood, succeed the MUSCLES AND NERVES. What our author says on the structure and functions of these parts, is not new; nor has he by any means embraced all the known facts. He does not speak of the curious microscopic observations of Dr. Edwards, on the relations between the ultimate extremities of the nerves and the muscular fibres, nor make a single allusion to Mr. Bell's discovery of a system of respiratory nerves, the most interesting of all the modern contributions to the physiology of the nervous system. We have already said, that our author is a distinguished opponent of the doctrine, maintained by Mr. Lawrence and others, that the phenomena of life, spring from organization alone. In the following extract, his ideas are set forth:

"I say the physiology of the nervous system, the physiology of secretion, the physiology of muscular action—all tend to convince my mind that Mr. Hunter's notions of life are true, and that there is some subtile material invisibly commixed with the visible fabric of the body, operating on each part, so as to produce the phenomena of the vital functions.

The deduction that I draw from the whole of the productions of modern anatomy, is a very curious and a very simple one. We know no more, after all, than what common sense dictates. We know no more than what a man of sense, in the first ages, would have believed, upon considering the phenomena of life, which is, that there is living in beings an organized structure invisible in the body; and in the common material a principle of life pervading every part—a sentient and rational faculty connected with the brain, but each apparently distinct from the other, though they are all intimately con-

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John Hunter; I believe sensation to be as distinct from life, as I do life to be distinct from the materials of our body. I say, that is a step beyond John Hunter; but it is an opinion that the most intelligent of mankind have always entertained; it is no new opinion. Have you not life without sensation? Cannot I ask that question? Do you believe that *vegetables* feel? There are some people who have a propensity to take things up by the wrong ends; and I say, if they had a poker presented to them with one of its ends *red hot*, they would lay hold of the red hot part rather than the other end, and burn their fingers of course. Dr. Darwin has done this; he begins to certify things, deducing inferences from the conduct of man. He says, man performs certain actions, because he *reasons;* therefore he infers, that *brutes* do the same thing, because they reason. This is common belief. Now I really do not know how people can believe it. I know not what kind of faith they possess, I am sure; but I do not believe that *instinct* is *reason*. I believe that it is *a blind impulse*, inducing actions far superior, in their effect, to what reason does; but still it is a blind impulse."—pp. 267–268.

His views of sensation and intellection are stated in a succeeding page, which we shall also transcribe:

"Well, I say, can you believe that life may exist without reason? I do believe it. I do not believe that vegetables feel, or that the lower order of animals feel in the degree in which we do; and as far as we know, all feeling is placed in one point in animals, which is a little *tubercle* at the top of the medulla spinalis. As soon as this tubercle begins to form, so soon we begin to find something sentient; and as this knob begins to grow, and becomes complex, so do animals have additional faculties and powers.

Now that is all I have to say upon the subject; for how any man, or set of men, can possibly believe that those faculties are the result of mere replications of the brain—for such the convolutions are—is what I cannot understand. I have no faith of that kind. The brain must be allowed to be the organ by which a diversity of perception is prone to act. We have divers perceptions, and divers faculties; but it is said that those are only the simple replications of the brain, which form the convolutions. Well, that is very strange. And how is it argued? Why, we have organs by which we see and hear, and smell, and taste—giving us diversity of feelings. Now, the eye does not see. The reason of the organization of the eye, you understand perfectly well, is to transmit the rays of light arranged in the same manner as they present themselves from the different visible bodies. The organization of the ear you understand. But the eye does not see, nor the ear hear. The notions we form must be dependent upon the peculiar properties of that which is perceptive, and it is wonderful; for what can we make of it, if we consider it intently? What

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is there around us, but matter in different states of motion and of rest? As subtile matter is reflected from objects, it is arranged on the eye in the same order in which it was produced from the surrounding objects. Well, there is the magnetism of the eye. Vibrations take place, and the agitation of the fluids in the labyrinth of the ear produces the sound. Oh! but it comes to this, that the vital actions of the nerves take place, and those are propagated to the brain; hence are the different sensations produced. All you can make of it is, a sort of vibratory motion; and how from one set of vibrations we can see, and from another we can smell, and from a third we can hear, is certainly very curious; but they are all vibrations, or tremors of the nerves. I say all this I can only attribute to the very curious properties of that which is perceptive, and that that has divers faculties superadded, capable of being acted upon by the brain, a subject which no one can consider without wonder. But I cannot believe that the faculties are occasioned by the magnetism of the brain. Now here the subject becomes *metaphysical*. I do not want to enter into metaphysics in this course of Lectures, but I believe if we were to go into metaphysics you would be of opinion as I am, that there is a unity of all the senses with the brain. They put the organs all in different places; whereas, I ask, how can you account for it? Many of the actions which are performed are the effects of compound motives. There is no answer that can be given, but that it must be done by sub-committees of the different organs—by the board of control. Now, I say, if you go to the board of control I am contented. However, every opinion has its day. But the opinions which I am in the habit of teaching here have endured from the first ages to the present time; therefore I think they will stand on. I think that all wonders—that all novelties of the day will decline, but that those opinions will flourish?"—pp. 269–270.

On the subject of Sympathy, Mr. A. is a follower of his celebrated countryman Whytt, whom, however, he never mentions. We are indeed, not a little astonished, that the name of this able sympathist is not oftener pronounced by those who profess to explain most of the morbid phenomena of living bodies by sympathy. His treatise on sympathetic affections, and on the agency of the nervous system, in producing them, has always seemed to us a masterpiece of physiological pathology. One of his favourite propositions was, that it is by the association of nerves with each other, at their central extremities, that sympathies are established; and this proposition has received great support from the discoveries and reasonings of Mr. Bell, on the specific charac-

ter and non-communication of the different nerves. But our limits do not permit an exposition of this interesting subject, and we shall dismiss it with a short extract:

"*Sympathy of Nerves.*—The dissection of the nerves sometimes has rendered it reasonable to suppose, what we are justified in supposing from every other part, that all parts of the body sympathize with one another. They show us the cause of sympathetic affections in divers diseases, and throw light on other subjects. It is, however, yet an indistinct light, but as the sun has risen, I hope it will go on and illuminate the subject more completely."—p. 288.

Disposing of the nervous system, our author proceeds to treat of the peculiarities of the fœtus, and with them finishes the anatomical part of his course. The remaining lectures, which extend through more than eighty pages, are on Operative Surgery, and contain many important rules and principles; but as the limits of our present number, although extended beyond the regular distance, will not admit of a suitable analysis of these practical lectures, we shall reserve them for some future occasion; and bring our review to a close, with a few general observations, on the plan and style of what we have travelled over.

Method says Linnæus *is the soul of science;*—an apothegm which should be inscribed on the portfolio of every public teacher. That our author has seldom had it before his eyes, will be seen and felt by all who undertake the perusal of his lectures. His subjects do not, in general, succeed each other in a natural order; and the subordinate parts of the same topic are often transposed in a manner, that could not fail to bring upon a writer of inferior genius, the imputation of deficient perspicacity: In Mr. A. it will of course pass for negligence. We cannot but marvel, however, that in the long period through which his prælections were delivered, he should not have been, instinctively, impelled to infuse into them the charm of a more natural arrangement. To himself it would have been a convenience: to his pupils and readers an unquestionable advantage. On the score of originality their claims are not very great, if we look beyond the cant phraseology

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in which they are dressed up. They are rather eccentric than original. But it is the province of a public teacher, to exhibit that which is already known, rather than to make new discoveries. Mr. A. nevertheless has taken and will support, an elevated rank among the original writers of the age; but it is on his previous writings that he must rely. In his lectures, however, we everywhere find indications of a powerful and perspicacious mind:—proud, whimsical and obstinate;—prone to do good, but impatient of interference in the manner—benevolent but rude.

Of his independence in thought and action, many anecdotes have been related, some of which do credit to the profession—while others present it in a dubious attitude. With such qualities, it is not remarkable that Mr. A. maintains an extended influence in the British metropolis. But we would warn those who aspire to a similar influence, elsewhere, not to imitate the oddities and ill manners of Mr. A. unless they have good assurance, that nature has endowed them with his genius, industry and perseverance. Without these, violations of decorum bring no reward; and with them, we may add, such violations are unnecessary.

But his style is in many respects still more objectionable, than the neglect of method, of which we have spoken. We are aware of the great influence of a *droll* and *gossiping* style, upon the attention of an audience, who are, day after day for months, to listen to the same professor. But we humbly conceive, that its efficacy may be greatly diminished, by its unceasing administration. Much of our author's drollery moreover, is coarse and unattractive, not to say offensive. A colloquial style it is true, is not without its advantages, but they are felt by auditors rather than readers. Many things seem well enough in the lecture room, that appear very different in the Library. Printed lectures, to be read with permanent interest, must be composed with some degree of dignity; and the neglect of this on the part of distinguished men in the profession, must of necessity contribute to vitiate the taste of its inferior members. We cannot but regret, therefore, that Mr. A. had not to a certain degree revised

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his lectures; and conformed them to the models which he, himself, had previously laid before the profession, in the compositions which he deliberately prepared for publication.

TO READERS AND CORRESPONDENTS.

The Editor is happy to find, that he has at length completed the publication of a number of the Journal, *within the* month for which it was designed, and confidently expects to accomplish the same thing with every future number.

The next number will contain a copious digest of Intelligence, both foreign and domestic.

To his correspondents, the Editor would remark, that such is the increasing patronage extended to the *Journal*, that whatever they write, will be read by a number sufficiently great to justify the most ambitious. In two months more, a new volume will commence, which with their aid he hopes will prove superior to the present. Such of them, as feel disposed to inscribe themselves in its first numbers, would do well to turn their attention forthwith to the preparation of papers.

The Editor was in hopes to have given in this number, the proceedings of the first meeting of the State Medical Society of Ohio, held at Columbus within the present month, but has not yet been able to obtain the requisite information.

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THE

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MARCH, 1829.

ESSAYS AND CASES.

ART. I.—*Observations on Fever and other Diseases of the South and West.* By MEDICUS.* No. II.

Perhaps the most interesting physiological fact, which has been brought before the medical world for many years, is the elegant, because natural division of the nervous system, as taught by Mr. Charles Bell. This system or division is beautiful and interesting, not only as relates to the connection of the various parts of the apparatus with themselves, but as regards the other tissues which they control, and the organs which they regulate. What can be more philosophic in the conception, or truer in fact, than that nature should prepare and arrange one set of nerves to govern the process of digestion; another to preside over the important business of respiration; a third for the powers of voluntary motion; and, finally, a fourth to perform the exalted functions of external sensation, and connect us with each other and with all surrounding objects.

How important to the pathologist to know this; and to know,

*It is proper to state that we were mistaken in saying that this writer is a graduate of Transylvania. He was an *eleve* of that institution, but graduated east of the mountains. ED.

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that rudeness offered to either, will, if persisted in, provoke the energy and resistance of the whole. To illustrate this, suppose marsh poison be presented to the skin, and the mucous membranes which line the interior of the system. Between these two surfaces, lie all the vital parts of the body. Widely extended over them is that division of the nerves allotted to nutrition; and, indeed, it is internally blended and connected with all the secreting organs of the body, whether the matter, separated from the circulating mass, be excrementitious or nutrient. I would again remark, that the noxious agent *must necessarily* be first applied to the skin, or mucous membrane; for the plain reason, that they are exterior to all the other parts.

The first impression is made on the nervous tissue of these parts, because the nervous is exterior to all other organized tissues. We feel the pain arising from a prick with a thorn or a needle, before the muscles are effected or the blood made to flow. We feel nausea from an emetic, before the vasular system is deranged, or the contraction of the abdominal muscles takes place. These feelings are confessedly experienced first by the nerves adapted to that office, and conveyed to the centre of perception by that division which governs sensation.

The nerves of the skin and mucous membrane, concerned in nutrition, have a duty to perform in common with those of the other secreting organs of the system, to wit, the defence and restoration of the body; and early in the progress of disease, they cause a correspondent impression to be created throughout the division controlling nutrition, growth and decay. When the nutritive nerves are unhealthy, secretion is imperfectly performed. All the secretions require for their performance an organ, nervous energy, and blood. The organ makes, by the agency of the nervous energy, from or out of the blood, whatever secretion in the animal economy it is destined to create or produce.

That a secretory process should be properly done, the blood must possess an aptitude to be acted upon by the organ, under nervous power; but if the nerves of nutrition in the skin

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and mucous membranes be disordered, and if they call to their aid a portion of the nervous energy of the other organs, those organs cannot manufacture the secreted fluid as they would do in health. The consequence is, that the blood goes, unrefined and unassimilated, through the system from organ to organ, and neither of them is able to purify or prepare it. Entering the veins it is returned to the heart, and then undergoes the pulmonic circulation. The lungs, because of their inability to bear the impress of such blood, and properly vitalize its labour and become oppressed. Unvitalized, and in a state of comparative impurity, the blood repasses to the heart, again to be dispersed to all parts of the body. In its progress it fails to give to each or any part its due share of vitality; and consequent injury is sustained by the nerves and muscles of voluntary motion.

In a state of health, if by venesection we cause a deficiency of the vitalizing principle, a corresponding deficiency takes place, in the action displayed by the nerves and muscles of voluntary motion. After the blood has been repeatedly presented to the organ of secretion, and as repeatedly passed through them unprepared; the powers of nutrition, of respiration, and of voluntary motion, are all impaired or suspended; some organ or surface, either naturally imperfect, or accidentally debilitated, yields to the enemy, becomes engorged and obstructed; a portion of the energy of each divison of the nervous system, is then directed to the support, or becomes connected with the disordered condition, of the suffering organ.

The division which presides over sensation is impaired in its power. Hence arises false vision, tinitus aurium, depraved taste, unnatural odors, and unreal pain. Thus it is that the whole nervous system becomes diseased.

In the symptoms of disease, arising from whatever cause they may, the blood vessel system is neither the first nor only one which is disordered or unbalanced. The nervous power as, remarked, is of equal importance in the sustentation of the individual: it is, in fact, co-extensive in its diffusion with

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the blood vessels. The symptoms which denote an unbalanced or diseased nervous action, are those which are first manifested; and from this I infer, that the nerves are the strings which first sound discordantly through the living body.

Those disorders as remarked heretofore, which partake of the nature of, or belong to the neurotic classs, are confessedly of a cold or low temperature. That is, they produce a diminution of the temperature of the body. Those individuals who are by nature possessed of a nervous temperament, have generally a coldness of the skin, and a low vascular action.—In apoplexy, hysteria, epilepsy, terror and all diseases which are produced by nervous excitement, coldness is nearly the first symptom presented. It is as invariable in its presence as any other symptom, and indeed more so. Whenever the nerves reign, coldness is the consequence.

If we reflect on the condition under which the body labours, when this tissue holds the government; and compare it with the opposite condition called vascular excitement, the conclusion follows, that though in health they harmonize very well, yet in disease they are a kind of rivals for ascendancy. It is the tendency of an exalted vascular action to increase the heat of the body, as it is that of a preponderating nervous excitement to depress it.

In the cold or nervous stage of a disorder, the action of the muscular tissue may be, and often is violent; but this action is involuntary, irregular, and agitative, producing the shake of an intermittent, and the tremor of fear, the unconnected movements of hysteria, the contortions of epilepsy, and the whimsical gesticulations of Saint Vitus' dance. On the other hand, the action of the body under vascular excitement is powerful, voluntary and determinate, and when moved, it is by the consent of the will, and for the accomplishment of some object, either really or suppositiously, within the reach of the individual.

The difference in the effects produced in the system when one or the other of the tissues has the ascendancy in action, is so palpable, as strongly to impress every clinical physician, with the fact, that each has its own peculiar mode of opera-

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ting. He will also recollect, that when there is a preponderance of action in neither, and when there is no tendency to such a preponderance, the body is in a situation entirely different from either of the others, and indeed in a state of health.

The vascular system yields to the controlling action of the nerves, and the coldness of the apyrexial state depends upon this controlling action. When the vascular action is high, the nervous energy has yielded, and heat or fever is the consequence of this yielding. When they are both well balanced throughout the whole system, it is in a sound and physiological condition.

In showing how the cold fit is produced, but more particularly in treating of the order in which the nerves become impaired, I have already referred to the manner in which the blackness of the blood is produced; but here I will repeat, explicitly, that it depends upon deficient secretion.

From the skin and lungs (and mucuous membranes elsewhere) the blood is by the capillaries conveyed to the return vessels, and by them to the heart. In consequence of their inadequacy to the business of secretion, as heretofore explained, that from the skin contains what should have passed out as perspirable matter, which is emptied into the right auricle of the heart; and that from the lungs is loaded with the matter of pulmonary exhalation and conducted to the left ventricle. The coronary circulation, or the circulation of the heart, is carried on with unvitalized blood, or with blood in a state of partial impurity, so are the other two, the general circulation and the pulmonic; both of which must be supplied with this black or depraved blood. One office of the lungs is to secrete from the blood, carbon or carbonic acid, which retained, causes its dark colour; but separated and cast out, admits of the scarlet appearance which we see in arterial blood. This appearance is an evidence to us, that it is vitalized. The blackness of the blood does not depend upon marsh miasma or cold, but upon a deficient action in the secerning organs.

I have already remarked, that when the lungs fail, the three circulations, are carried on with this black or unvitalized

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blood. It is in its quality unnatural. The central organ of the circulation, is not only assaulted in its great cavities by this unnatural stimulus, but its very substance becomes irritated. Finding, that by its ordinary exertion it cannot rid itself of this unwelcome tenant, the black blood, it becomes excited, increases its activity, and the nervous system, fatigued by its exertion and debilitated by the remote cause, yields to the increasing action of the vascular system. The heart contracts and dilates with force and celerity. It throws the blood out upon the capillaries; they, after it has been ineffectually applied to the skin and other secretory organs to be renovated in quality, return it to the heart; thence it is cast into the lungs, where its presence irritates the respiratory nerves, respiration becomes accelerated, and the blood, black and unærated, is forced back to the heart, which is increased in the vehemence and force of its contraction. Thus is brought on the stage excitement. A stage in which the vascular completely triumphs over the nervous system. The centre of circulation has government over the centre of perception, and thus they have ascendancy, *tour a tour*, in our ordinary diseases.

Whenever the disease partakes of a general, or constitutional character, or throws into disarray the whole body, it is ushered in with a cold or chilly sensation, because the nerves always experience the first impression. In those cases of poisoning, or of severe accidents, in which death is *suddenly* produced, no congestion occurs in the venæ cavæ, or portal circle; and the blood has not the same dark or black appearance, as is observed to take place in deaths brought on more slowly. The cause is obviously this. The nervous tissue is so immediately injured, as not to lend aid to the organs of circulation. The blood may pass a few rounds, and but few. Death does not arise from "blackness of the blood and consequent weakness of the heart," but from the prostrating operation of the destructive agent on the nerves. Death occurs so soon after the accident, that the blood has not had time to be changed greatly, nor has reaction caused a congestion or engorgement. There may be a co-agulation of

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blood in the great vessels about the heart, but in strictly professional language there is no congestion. Nor do congestions occur during the nervous state. They arise because of increased vascular action.

In consequence of a casual or congenital proclivity to weakness, some organ yields to this strong and rapid motion of the blood. Debility arising from any cause, incapacitates an organ for the performance of its part in this accelerated circulation. Here, then, occurs "the stagnant juices which lie out of the verge of circulation," as spoken of by Langrish. I should esteem it quite an imaginary supposition, indeed, that the blood would, when impelled by an immense and powerful *vis a tergo*, pursue the common channels of circulation, and wait till quietude was restored for the opportunity to creep "out of the verge of the circulation."

If there be no physical liability to disease in any part, then, the liver is most likely to suffer. The sluggish venous circulation of that organ, its expansibility, and the soft and yielding parts by which it is surrounded, contribute to make it the seat of obstruction or the receptacle of blood.

The temporary loss of so much blood out of the general circulation, diminishes the quantity of impure blood returned to the heart. Another circumstance also contributes to tranquilize that organ. It is this. By contracting with increased frequency and force, it has thrown the blood an increased number of times upon the skin and lungs; which, though they vitalize it imperfectly, at each time, yet in the end do much for the benefit of that fluid, the heart becomes tranquil, and immediately the preparation for the cold stage, or the nervous action commences. It is brought about, is carried on and terminated in the manner before explained.

In writing on the pathology and treatment of the diseases of the south and west, I shall have ample opportunities of illustrating this subject.

(TO BE CONTINUED.)

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ART. II.—*Cases illustrating the efficacy of Paracentesis, in abscesses of the Pleura.*

1. *A case of Empyema successfully treated by Paracentesis Thoracis.* by JEREMIAH H. BROWER, M. D.

J. Bolander, a stout, robust German, was attacked about the first of Nov. ult. after unusual exposure to the weather, with severe pain in the left side, attended with difficulty and pain in breathing, and dry, harrassing cough: he took some aperient medicine, was bled and sweated, which relieved the violence of the pain in some degree, the cough still continuing with occasional fever. This state continued for three weeks, the patient still at times pursuing his occupation as a shoemaker; when he applied to me for advice, he complained of a dull obtuse pain in the left side; inability to lie upon the right side, an attempt at which produced an immediate sense of suffocation and faintness; the pain but little increased by full inspiration; countenance pallid, and emaciation great and progressive; he coughed incessantly, expectorating in large quantities, fœtid purulent matter; the offensiveness of which produced constant nausea and vomiting: regular hectic paroxysms were established. About two weeks from the commencement of his illness, he experienced a severe rigor, which lasted for half an hour, a few days after which, his fever assumed the form of regular hectic exascerbations, his pulse was small and frequent; bowels regular, & tongue clean. Upon attentive examination, the left side of the chest was perceptibly larger than the right; by percussion of the left side, in the lower portion, a dull, dead sound as of a solid body was elicited, while in the upper portion, above the fourth rib, and in the axillary region, it was unusually clear and resonant; the right side yielded a hollow sound when struck. By applying a cylinder to the left side, not the least respiratory murmer could be perceived in the lower portion of the chest; in the upper portion, and under the axilla it was indistinct, and a peculiar hissing sound was perceptible, which I can compare to nothing so aptly, as displacing water in a vessel by blowing through a tube. In the right side, throughout its whole ex-

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tent, a distinct respiratory murmur was perceived, and on that side the action and rythm of the heart were much more distinct than on the left; the patient remarked, that for several days past, he was sensible of the splashing of a fluid in the left side, and upon succussion, a fluctuation was distinctly ascertained. Under these circumstances there could be no doubt of a purulent effusion, into the left cavity of the chest having taken place from an abscess in the cellular structure of the lung, into which one or more of the ramifications of the bronchiæ opened, and that an operation for its evacuation, presented the only prospect of relief or recovery. This the patient anxiously desired, and accordingly, on the first of December, I proceeded to it by an incision between the sixth and seventh ribs at their angles, cautiously avoiding the intercostal artery, and upon laying bare the pleura costalis a small sized trocar was pushed through it. A rush of fœtid gas only, immediately followed it; the patient had some years since, suffered from a protracted pleuritic affection of the same side, I thought it probable that extensive adhesions had supervened, and now obstructed the exit of the matter contained in the sac of the pleura. As the patient was considerably exhausted, I left the canula in for an hour, and then withdrawing it, passed in and downwards a large gum elastic catheter, by which three pints of thick fœtid pus were slowly evacuated; the patient could now, by taking a full inspiration and closing the larynx, expel the air from the wound in the parietes of the chest. Great and immediate relief from the cough, dyspnœa and pain was obtained. A bougie was left in the opening for forty-eight hours, when, the cough returning, the catheter was again introduced and nearly two pints of bloody purulent matter discharged. The cough &c. abated, and my patient began to improve rapidly in appearance; his appetite was good, and sleep regular and refreshing. He continued to do well until the fifth day after the operation, when in a violent fit of coughing the tent which was kept in the wound, suddenly burst forth and was followed by a discharge of a pint and a half of the same sanguineo-purulent fluid as before. From this period his health and strength rapidly and steadily impro-

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ved, and in four weeks from the operation, he was able to assume his work at the bench as usual; no inflammatory or untoward symptoms followed. The medical treatment was confined to mild asperients, with an occasional dose of Dover's powder at night, and towards the close, tonics and generous diet: the wound became fistulous, but by a few applications of argenti-nitras, it healed kindly. The left side now yields a sound clearer than the right, and is evidently less prominent than before the operation.

I have been induced to report this interesting case, from an impression that we are too much disposed to abandon, as hopeless, prolonged diseases of the cavity of the chest, from a fear, (perhaps in many instances groundless,) that the pulmonary structure has suffered so much as to preclude the possibility of relief; but in the present advanced state of our knowledge of the diseases of the chest, the result of extensive and persevering pathological research, and the increased certainty in their diagnosis, resulting from the attentive employment of the stethoscope and percussion, may we not indulge the hope, that many of the cases, heretofore abandoned as unsusceptible of even partial or temporary relief, may, by a more energetic and discriminating practice, be brought to a happy termination. The result of the above case, seems to justify the following conclusions, viz: That when it is ascertained, that a sero-purulent effusion into the cavity of the chest exists, unconnected with disorganization of the cellular tissue of the lungs, the operation of paracentisis thoracis, speedily gives relief, and often effects a cure; and that even when such structural disorganization is in progress, may be the means of relieving the sufferings of the patient, and prolonging life; and that we can be greatly assisted by auscultation and percussion, together with measurement of the two sides of the chest, in cases of empyema, in determining the presence of a fluid, and the best spot for the incision, and that in such cases, even under the most gloomy appearances, we should not despond, as recovery partial or total, is possible under the most unfavorable circumstances.

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2. *An account of a case Empyema, consequent upon Measles, cured by Paracentesis.* By the EDITOR.

Measles, of a type decidedly phlogistic, prevailed in Cincinnati throughout the spring of the year 1813. Among its subjects, was Matilda Harsher, aged 9 years, a child well developed and previously in good health. Instead of the antiphlogistic treatment which the epidemic demanded, her physician relied chiefly on Bateman's drops. Under a plan so stimulating, a cough and fever, as might have been expected, continued still to harrass her after the subsidence of the eruption.

Several weeks subsequent to this event, about the first of June, I was requested for the first time to visit her. I found her labouring under fever, the paroxysms of which were followed by colliquative sweats. Her pulse beat upwards of 150 in a minute, with great irregularity and feebleness. Her cough was dry; respiration difficult, and sense of suffocation distressing. She was unable to lie in a recumbent position, or on her right—the sound side. Her emaciation was decided. All the symptoms, in short, were discouraging.

On examining her chest, I found it out of shape. The upper part of the left side was manifestly enlarged and sore to the touch, especially below the nipple and in another spot over the false ribs. The cellular tissue was not œdematous. The heart could not be felt on the left side; but was found palpitating with great frequency and irregularity in the right side, at a point nearly corresponding with its usual position in the left. The right side, thus compelled to afford a lodgement for that organ, had lost *its* proper form. The ribs had bulged out, so as to present a rounded and irregular tumour, in the region of the right breast. As the important discoveries in auscultation, with which Lænnec has favored the profession, had not then been made, the stethoscope of course, was not tried.

The alarming situation of my little patient, required that something should be promptly done, and I administered an emetic and applied a blister to the left side; but these prescriptions, for which no adequate reason could, perhaps, be

assigned, afforded not the least relief; and, in three days, her paroxysms of dyspnœa, and her inability to lie down had greatly increased.

An operation now seemed to be indispensable. On re-examining the affected side, the 5th, 6th, and 7th ribs appeared separated from each other, and there was a manifest fluctuation within. Between the 5th and 6th ribs a soft swelling, not very prominent, was obvious; and this was the spot selected for the puncture.

A horizontal incision, an inch and a half in length, was made through the skin and cellular tissue; when, instead of meeting with the intercostal muscle, the knife passed immediately through the pleura. The flesh at this spot had in fact been absorbed. A pint of 'laudable pus' was forthwith discharged. The wound was then dressed with lint and a poultice; but it continued to discharge copiously through the following night, and more sparingly the next day. The second night it ceased, and on the morning of the third day, the cut edges of the pleura seemed to have united. They were forced asunder, and a leaden canula introduced and left in the wound. By this measure, the evacuation was re-produced and continued with some copiousness, till about the fifth day after the operation, by which time we estimated, that she had lost at least three quarts. Thenceforth it was moderate.

Great and almost instantaneous relief resulted from the operation:—The chest diminished in size and deformity; the pulsations of the heart in the right side, became less violent, and soon fell to 110 or 12 in a minute, with great improvement in their rhythm; her cough moderated, and she could lie with her head and shoulders much lower.

She was put forthwith on the use of the Bark, and continued it for twenty months, during which she took thirty-two ounces. About a year after the operation, when I was no longer in attendance upon her, she was seized, as I have since understood, with a severe ague and fever. It might be supposed to have been hectic, but that the shake was protracted and violent, and the type of the disease changed, after a time, from quoti-

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dian to tertian, At the onset of this new malady and throughout its whole course, she was still using the Bark.

The canula was worn for twenty-eight months. In the latter part of this long period, she had but little cough or discharge, and was able to go to school. After it was withdrawn she had fits of general weakness, nausea, and sense of sinking about the chest; but within a few weeks these symptoms left her, and she ever since enjoyed good health.

After many years of separation from my patient, we lately had several professional interviews, and this evening (March 23, 1829,) she permitted me to examine her thorax.

The heart has returned to its proper situation, and can no longer be felt in the right side. By the stethoscope I ascertained, that its size and contractions are natural. The chest generally sounds tolerably well; but is much more sonorous just below the spot where the incision was made, than at any other point, indeed more so than is common. Neither at that spot, nor any other to which the cylinder was applied, can pectoriloquism be perceived. The respiratory murmur is no where loud. It can indeed, be scarcely heard, except in the superior parts of the chest; but is at least, as perceptible in the side affected as the other. Pressure gives her no pain or dyspnœa, except when made on the spot that was punctured; which is still tender, and although 13 years have elapsed since the orifice closed up, the cicatrix is still red. Measured from the ensiform cartilage to the spine, the affected side is about half an inch smaller than the other.

She lies equally well on her back or either side, and so far from requiring her head and shoulders to be raised, she prefers them unusually low; she can ascend a stair case or a hill, without any difficulty of breathing; she has no cough; finally, when at any time she has experienced a pain in the side, it has been in the one opposite to that affected with the abscess. She is now married and has one child.

Remarks.—This case in its origin was a striking example of the pernicious effects of a stimulating treatment in measles. If the operation had not been performed, the abscess *might*

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have broken externally, but before the pleura and skin could have been absorbed, she would probably have died; the operation, therefore, may be said to have saved her life. The occurrence of ague and fever while the Bark was taken daily, was certainly not to have been expected. The canula was worn much longer than was necessary. We learn from it that the cavity of the pleura will bear, with impunity, a long continued exposure to the atmosphere.

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3. *Notes of a case of Empyema from chronic pleurisy, in which the operation gave relief.* By the Editor.

William Davis, aged 35 years, residing in or near Louisville, was attacked with ague and fever in June 1826, and had occasional relapses for nine months. For three months more was pretty well; when he was seized with a pain in his right hip which yielded, as he supposed, to the shower bath. Soon afterwards—in September—he was seized with pleurisy in the right side, for which, under the care of Dr. Galt and Dr. Dalton, he was bled four times and blistered many more.—Considerably relieved, but still labouring under pain, cough, and dyspnœa, he came, in October, to the neighbourhood of Cincinnati, and called in the aid of a 'Dutch doctor;' who attended him until he became my patient in February. During that period, he was bled once and blistered several times. Of the medicines ordered for him I could learn nothing, except that one of the mixtures contained the oil of peppermint, and greatly aggravated his symptoms whenever he took it.

When he came to the city and put himself under my care, his prominent symptoms, were an incessant cough with copious expectoration; a pulse beating from 120 to 140 in a minute, weak and elastic; irregular hectical exascerbations; copious night sweats; an inability to lie in a recumbent posture; insomnolency; dyspnœa, greatly increased by the least exertion; œdema of the lower extremeties, which had existed all win-

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side of the chest and abdomen; debility so great as scarcely to be able to walk across his chamber; and general emaciation.

EXTERNAL EXAMINATION OF THE CHEST.—*Form and size.* To the eye, directed towards the face of the patient, his left side appeared more convex than the right, which in the lower part seemed rather flattened; but below, and not far from the right breast, there was a considerable bulging out of the ribs, and thickening of the superincumbent soft parts, which were œdematous. The most prominent point of this tumour was red. A fluctuation was perceptible. Measured over the swelling the right side was the larger; but above it the dimensions were reversed.

Pressure.—He bore pressure well over the whole chest, except on the tumour, where it hurt him. He also felt pain in the same part on coughing.

Percussion.—On being struck, the whole of the left side was sonorous; but the right was inelastic and emitted no hollow sound, except in the region of the spine, high up.

Auscultation.—In using the stethoscope, the respiratory murmur was audible over every part of the left side; but could only be perceived in the superior part of the right. Near the spine on this side, there was decided pectoriloquism; which was, also, perceptible in a slighter degree on the left.

Heart.—The rhythm, impulse, and sound of this organ, were natural. In the *right* side, especially in the axilla, the sound was louder than in the left. Posterior to the tumour, there was a metallic tinkling connected with the contraction of the ventricles, which could be heard in no other part of the chest.

From the general symptoms my first impression, of course, was, that the patient laboured under an incurable dyspeptic consumption; but after an examination of the chest, and the discovery of a purulent accumulation in the side, the case assumed to my mind the character of chronic pleurisy combined with hepatic derangements, the offspring of intermittent fever.

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ed to offer the only hope of relief which remained for the unfortunate patient; and from *it*, but temporary benefit could reasonably be expected.

On the 10th of February I performed the operation, which was nothing more than the introduction of a broad lancet, as in opening a common abscess. It evidently entered a cavity, but no pus followed its withdrawal. The patient, however, was directed to bend his body forward, when a free discharge of purulent matter, to the quantity of 6 or 8 oz. ensued. The canula was introduced, and cotton applied over it to absorb the pus, which for many days continued to flow copiously. The tube was not worn long, as it seemed unnecessary; but the discharge continued, gradually decreasing, till the patient set off for the city of New York, in the month of June last; and it appears, by the accounts received from him, that it still remains. Immediately after the operation, he was put on the use of the Bark, opium, the blue pill, and prepared chalk, the last of which was required to moderate his diarrhœa. He also, at different times, took diuretics for the relief of his dropsical symptoms.

It remains to speak of the effects of the operation. These were, in all respects, as salutary as could have been expected. His cough, expectoration and dyspnœa were signally diminished; his pulse experienced a great abatement in its frequency; he slept much better, and could lie with his head and shoulders, at the usual elevation; his night sweats recurred but seldom; his strength returned, so that he was soon able to walk about the city, and ascend to its most elevated places; his digestive functions were ameliorated, and he recovered a great deal of flesh. The œdema of his lower extremities, however, continued, though it did not increase; the diarrhœa was still prone to return; and, about three months after the operation, he suffered an attack of violent pain in his knee and ankle joints.

Before his departure for New York, I examined his thorax. The symmetry of its two sides was nearly restored; but the

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where it was suspended; nor had its sonorousness returned.

This was, evidently, not a simple case of chronic pleurisy, occasioning sero-purulent effusion. The dropsical infiltration into his lower extremities, and the pains of his joints, his irregular bowels, pain in the region of the liver, and sallow complexion, sufficient to indicate a hepatic disease; while his copious expectoration before the operation, and the inaudible and inelastic state of the right side render it extremely probable, that the right lobe of the lungs is hepatized, or otherwise deranged in its structure.

In the midst of so much complication, all that could be reasonably expected, was the relief that would follow the evacuation of the pus accumulated in the cavity of the pleurisy. The amount of this palliation has been stated; and must, I think, be acknowledged to have been sufficient to justify the operation, and recommend its adoption in all cases of a similar kind.

ART. III.—*Notes of a case imitative of Neuralgic affection, occasioned by Mercury.* By Doctor J. BENNETT.

In the Spring 1825, I was consulted by a man who had contracted syphilis; and found him labouring under chancre, bubo, and an eruption on the skin. I put him on a course of mercury, and directed confinement to his room. The mercury soon produced a ptyalism; and from its first affecting the mouth, he complained of unusual pain in the right cheek, which I took but little notice of, supposing it arose from decayed teeth. As the soreness of the mouth increased, the painful affection of the cheek became almost insupportable. On attempting to speak, the muscles of the right cheek were thrown into violent spasms; indeed, every motion of the face was followed by a paroxysm: the pain, following the course of some of the principal nerves of the face, indicated its affinity to tic douloureux.

To remedy this affection, I had recourse to opium, both internally and externally, using a watery extract of solution, as a wash to the mouth. Although this medicine was not spa-

to an intolerable degree, and the spasmodic twitchings became almost incessant. On the day following the exhibition of the opium, I directed him to take Bark, hourly, in as much wine as would form a convenient vehicle. On visiting him in the evening, I found him free from pain; he informed me that he had attempted to take the bark; that it had vomited him and produced violent pain and spasms, in the muscles of the face. For relief my patient flew to the wine bottle, half a pint of which he drank at a single draught; which tranquilized the spasms and suspended the pain in a few minutes. He subsequently drank the same quantity through the day, resorting to it whenever he felt the pain returning, with immediate relief. His mouth was less sore this evening, and the discharge of saliva had evidently increased.

Wishing again to try the effects of opium, I directed him to discontinue the wine during the night, and to take that medicine in combination with camphor. In the morning, I found him suffering the most excruciating pain, which came on soon after he had taken the opium, and continued to torment him through the night. The wine was now resumed and again afforded immediate relief. From this time the patient suffered little or no pain. He kept up a moderate excitement with the wine until his mouth was well, which happened sooner than any case of sore mouth from mercury, which I recollect to have seen. A subsequent salivation in the same patient produced a similar disease of the muscles of the face, and the same remedies produced the same effects as before. I ought to remark that the patients teeth were sound.

Is mercurial sore mouth more speedily cured by a liberal use of wine, or ardent spirits, than by the ordinary remedies? Does not the free use of wine produce a discharge of saliva in mercurial cases, attended with dryness and ulceration of the mouth, with hemorrhages from the gums? May we not infer from this case, that wine would give relief in certain forms, of true tic douloureux?

Newport, Ky. January 18, 1829.

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ART. IV.—*A Sketch of the Life & Character of Dr. Thomas Hinde.* By the EDITOR.

In the 5th number of this volume we took occasion to notice the age and character of the oldest patriarch of the profession in America, Dr. Holyoke, of Salem, Massachusetts. In the present number we propose to say something of one of his cotemporaries, who lately descended into the "valley and shadow of death."

But few of the physicians of Cincinnati are aware, that one of the most ancient, and in his day successful, members of the profession, has resided for the last 18 or 20 years and died within a few months, in their immediate neighbourhood. Dr. THOMAS HINDE, to whom we refer, expired in the autumn of 1828 at Newport, Kentucky, at the venerable age of 92 years. Commencing the practice of his profession at an early and continuing it to an advanced age, few men of any country were ever devoted to its arduous and responsible duties for a longer period. Yet he has, like the majority of the profession, left behind him no written memorial, of his unwearied labours in the great cause of humanity. When a humane and skilful physician expires before he has passed the scriptural limit of human life, scarcely any event is seen to agitate society with a gloomier feeling of sorrow. A long train of mourning friends and patients, attest how deeply he had inscribed himself on the hearts of all around him. Indeed, we have long thought, that the honours thus awarded, might fill the measure of any man's ambition. It was, however, the fate of Dr. H. to survive the majority of those to whom he had administered health and comfort; to outlive his own well earned reputation; to see not merely the beginning, increase and meridian, but the decline and extinction of his professional fame, perishing, as it necessarily did, with the beneficiaries of his skill and kindness.

To those who thirst after posthumous distinction, and would leave a name to be named with reverence by the generations that are to follow them, the life of Dr. H. may afford a salutary lesson. To affectuate their aim, they *must write*, as

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well as observe and think. If they do not record their experience in the annals of the profession, 'their works will follow them.' In Medicine, none should hope to live with the ages which are to come, who do not write. But a different and nobler reason may be urged for this duty. The improvements which a physician makes, are lost to the profession, unless committed to the press; and thus the benefits which he might confer on future times never reach them. If all the practical discoveries which have been made since the revival of Medicine in Europe, and never communicated to the public, could now be recovered and embodied, it is an allowable presumption, that they would constitute a most valuable addition to the maxims and formulæ of the Profession. Every one must recollect, to have seen physicians of age, extensive experience, and acute observation, descend to the grave without having contributed their due proportion, or indeed, any proportion at all, to the stock of facts which it is the duty of all to augment. We remember several practioners of this class, who like Dr. H. left no written memorials of their success; while, like himself, they might, we believe, have contributed something of permanent utility to the science. Several causes might be assigned for this omission; and although it may be considered out of place, we shall venture to name one of them. In the minds of many physicians, there is a wrong estimate of the contributions which certain writers have made to the profession. They are valued too high; an error which would demand no correction, if it did not discourage those who can contribute but a mite, from casting that mite into common treasury. The truth is, that the longest writers have not been the greatest contributors; and that the amount of *new* facts with which the most voluminous authors have enriched our archives, is much less than many suppose, and ought not to deter any one from publishing the smallest discovery which he knows to be real. But we must return to the subject of our sketch.

Dr. H. was born in Oxfordshire, England, on the 10th of July, 1737. After receiving a suitable degree of classical

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education he was sent to London, to study physic and surgery. His principal tutor was Dr. Thomas Brooke, one of the physicians of St. Thomas' Hospital. The practice of this physician was embodied and published, by his brother, Dr. Robert Brooke, in two volumes, which we recollect to have read; though nearly half a century has elapsed since they were ordinary books of reference.

In the year 1757, at the early age of twenty, Mr. H. had made such proficiency, that his master presented him to the Royal College of Surgeons for a license. Sustaining a satisfactory examination, he immediately afterwards received the commission of Surgeon's mate in the navy; and sailed for America, with the forces under the command of Gen. Amherst.

He landed at New York on the 10th of June, 1757; and was afterwards, during the same year, with the squadron at Louisburg. The following winter he spent at Halifax; and in 1758, assisted in the reduction of Louisburg by Amherst. A new conquest was now meditated and our young Surgeon proceeded with the celebrated Gen. Wolfe, in his memorable expedition against Quebec. It was his good fortune to be attached to the ship which bore the commander in chief, where he had ample opportunities of seeing much of that distinguished man, and observing his operations. His reminiscences of these events, were among the most cherished of his life. Down to the day of his death he was accustomed to describe the General as "a tall and robust person with fair complexion and sandy hair; possessing a countenance calm, resolute, confident, and beaming with intelligence."

Dr. H. was near the General at the moment of his fall, and when an aid exclaimed, 'they run, they run,' the Doctor heard the expiring chief articulate the question, 'who run?' He was answered, 'the French, sir; they are running away in all directions:' 'then,' said he, 'I die contented,' and sinking into the arms of the officer who supported him, he expired.

This celebrated death scene has been often painted, and in some of the pictures Dr. Hinde is represented as being present, and feeling the pulse of the wounded General.

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After this event Dr. Hinde was present at the reduction of Bell'isle. Having experienced promotion, he remained in the service as surgeon of a vessel of war, after the peace of 1763; but was at length induced to abandon the navy for a residence in the colonies. An aged physician of Virginia had written to Dr. Brooke, requesting him to send out from London, a young physician of talents, who might assist him in business. Dr. Brooke selected for this purpose his pupil Dr. Hinde, and earnestly advised him to avail himself of the situation which was offered. To this influence was added that of a kinsman in Virginia, and a gentleman in the same state, who had been his friend and fellow student in London. Yielding to their united importunities, he resigned his commission and set sail for the state just mentioned, where in 1765 he settled as a physician. His first residence was in Essex county; but he soon afterwards left it for King and Queen, where he purchased property and engaged in the practice of medicine and surgery with great success. In 1767 he married Miss Mary Todd Hubbard, daughter of his countryman Mr. Benjaman Hubbard, an English merchant; by whom he had eight children, and with whom he lived 61 years. For reasons which are unknown to us Dr. Hinde did not continue long in this situation, and his next removal was to Hanover county, where he established himself in the neighborhood of the celebrated orator and statesman, Patrick Henry, and became his family physician. He was also in the vicinity of another eminent man, the Reverend Samuel Davis, afterwards President of Princeton college. To the society of these great men, especially the former, the Doctor was chiefly indebted for his conversion from Royalty to Republicanism. Under the powerful influence of the orator and patriot, the Doctor forgot both his king and native country, and engaged with zeal and activity in the eventful cause of the oppressed colonies. Lord Dunmore, the Governor of Virginia, was his countryman and personal friend, and they had done each other acts of kindness; but in the mind of the Doctor, all personal considerations were absorbed by those involved in the approaching contest; and he became Henry's chief Surgeon in 1775, when he

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marched against Lord Dunmore, on what was called the gun powder expedition. Subsequently he prepared himself to act as Surgeon to the regiment, which Henry was destined to command; but relinquished the design, when a new direction was given to the efforts of his friend, by his being elected Governor of Virginia. The Doctor, however, did not become an idler in the cause of liberty; possessing the confidence of the Governor, he was appointed to inoculate the troops designed to enter the continental service. To this responsible duty, he devoted himself with a zeal which conferred on his adopted country the most important benefits, while it seriously impaired his private fortune.

After the termination of the war, he continued for many years to reside in Hanover county, dispensing the benefits of his profession with distinguished effect.

Dr. Hinde had been educated in the principles and practice of the Episcopal Church; but he had now become a Deist, and took pride and pleasure in ridiculing Christianity. His views and feelings, however, at length underwent a radical change; the immediate cause of which was so uncommon, and, at the same time, so professional, that we shall not hesitate to relate it. His wife and daughter had been converted to Christianity, and attached themselves to the Methodist Episcopal Church. For this act, his daughter was banished from his house, and his wife placed under medical treatment, for what he considered, or affected to consider, insanity. His remedy was a blistering plaster to the whole length of the spine, which he left on for several days. By this measure of violence, he hoped to deter her from further attendance on places of public worship. But, as he used to say, God turned the 'huge blister' upon his own heart. The christian fortitude and meekness, with which his wife bore the protracted anguish which his cruelty inflicted on her, excited his sympathy and filled his soul with remorse. A feeling of respect was awakened towards that religion, whose votaries could endure such pain and persecution, without a murmur; and he was led forthwith to investigate its origin and principles. The inquiry resulted in a perfect conviction of its divinity; and he at-

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by violence to estrange his wife and daughter; and for nearly half a century, continued one of its most devout and exemplary members. Such was his temperament, indeed, that he may fairly be said to have passed into the opposite extreme. Down to his dying day, religion was his darling theme. No waking hour ever passed, whoever might be present, in which he did not utter some expression of admiration for the christian faith, and thank heaven that he felt its influence. Throughout the whole of this long period, he never attended to the call of a patient, without first retiring to pray in secret, for the success of what he might prescribe; and when he reached the house, whether of rich or poor, christian or infidel, his invariable practice was, to assemble such members of the family as could be conveniently brought together, and re-engage, with them, in prayer for the recovery of the sick, before he would exhibit a single remedy. In the efficacy of prayer the Doctor was a firm believer, and not a few of his patients cherished the same faith. To all such, his religious efforts were auxiliary to his professional; as they contributed to tranquilize the feelings, inspirit the hopes, or confirm the resignation of the sick. Indeed it has long appeared to us, that religion is in some degree a natural inmate of the sick chamber. Most people, when seriously ill, become affected either with religious feelings, or superstitious horrors; which may frequently be quieted, or made to take a most useful direction, by the presence and conversation of judicious christians. However this may be, I am not aware that Dr. Hinde's patients, at any time, suffered injury from his persevering discharge of what he undoubtedly regarded as a solemn duty.

In 1797, Dr. H. left Hanover for Kentucky, and fixed his residence in Clark county, where he speedily acquired an extensive practice, especially in Surgery. This was the last theatre of his professional exertions. The long but bright evening of his life, was spent in Newport, where beloved and honoured he expired inthe midst of his descendants.

As a surgeon and physician, Dr. H. for a period much lon-

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its duties, in a manner and with effects, which inspired universal confidence. He performed most of the higher operations in surgery, for which his service in the navy nearly eight years, had peculiarly qualified him. In military surgery his practice had, indeed, been great; as he was attached to the army and navy during a period in which many desperate battles were fought. After some of these, he amputed limbs, to use his own familiar language, 'by the cart-load.' Nevertheless, he does not seem to have been prone to resort to the knife; but, in general, to have regarded it as the *ultima ratio artis*. His great object was to render it unnecessary, by an appropriate plan of treatment; and this object, from his diversified experience and great natural sagacity, he frequently accomplished under circumstances so discouraging, that other practitioners had lost hope in every thing but the scalpel. On this subject his example is worthy of all imitation.

In physic Dr. H. was not less successful than in surgery. He was practically acquainted with the diseases of ships and armies; and during his long residence in Hanover county, at that time, annually infested with autumnal fever, he acquired great skill and character in the cure of that epidemic. In the treatment of small-pox, from the duty assigned to him by Governor Henry, he had a degree of experience which has seldom fallen to the lot of any individual. At one time, with the aid of a single assistant, he had 1500 patients under his care, with that malady.

Dr. Hinde was an acute physiogomist. He had studied diligently the rules of Lavater, correcting and augmenting them by his own observations. He frequently averred, what no well informed person will venture to deny, that his knowledge of physiognomy was of great use to him in the practice of his profession. By long and attentive observations on the human countenance, he came to know by a *coup d'œil*, not only much of a patients thoughts and feelings, but also a great deal relative to his temperament and diseases. On this point not less than the last, his example deserves to be followed;

nothing in the aspect of the sick should ever escape him.

The incessant exercise of this faculty, led the Doctor to observe many things connected with the constitutions and health of his friends and acquaintances. He was, indeed, in the habit of studying their physical, not less than their intellectual character, and accustomed, at all times, to express his convictions freely. He thus, in many instances, warned them in time of approaching danger; indicated to individuals the diseases to which they were constitutionally liable; and thereby directed their attention to the appropriate means of prevention,—a superintendence which every practioner should exercise over those who call him their 'family physician.'

His admonitions and prophecies should, however, be delivered prudently, or they may do harm instead of good. In the following case it is not altogether clear, that the prediction did not contribute to its own verification.

'Mr. Ellis,' said the Doctor to one of his Virginia friends, 'take care! I know your constitutional tendencies; you are in danger of speedy death.' 'Doctor,' he replied, 'I never was so hearty in my life.' 'For that very reason,' rejoined the Doctor, 'you are in great danger. From your form and temperament, you will probably go off in an apoplectic fit. Life ebbs and flows; you are at high tide; your system must sustain a shock!' In about two weeks Mr. Ellis was no more; but the gentleman who heard the dialogue, does not state of what disease the patient died.

In his attention to the sick, in the active stages of his life, Dr. H. was unremitting and exemplary. When the infirmities of age began to gather upon him, like all others he felt the labours of a country practice irksome; still, however, he was capable of being aroused to exertion by whatever strongly addressed itself to his *sense of duty as a christian.* The following anedote, often related by himself, may serve to illustrate his character on this point.

When residing, at an advanced age, in the interior of Kentucky, he had a visit of several days from his old and excellent friend Bishop Asbury. During the time, he was sent

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for to visit a patient at some distance, who was alarmingly ill. The night was dark and rainy, and the Doctor, much afflicted with vertigo, hesitated to obey the summons. The messenger was greatly distressed; when the Bishop, who had been awakened and overheard the conversation, exclaimed—'Doctor you *must* go!' 'Good Lord,' he used afterwards to say, 'the words appeared to me, as though they came from Heaven! I went and found the patient in agony—a few hours more and he would have been past recovery—his case was desperate indeed! I first prayed and committed him to God; then applied medical aid and used every possible means till morning, when, to the great joy of his family and friends, he was entirely relieved, and offered up thanks to God. I have always regarded this event as a singular providence.'

After what has just been said, it is almost superfluous to add, that Dr. H. was a consistent and untiring attendant on public worship. His taste and judgement kept him in communion with the respectable sect of christians, to which he, at first, attached himself; but he cherished the kindest feelings towards all others, of which he gave many practical evidences. The zeal which he felt when united with his brethren in devotional exercises, was, in the language of chemistry, highly *effervescent;* and frequently manifested itself in *ebullitions* of feeling, the most artless and unaffected. Instances of this kind have been mentioned to us; one of which, as illustrating this feature of his character, we shall present to our readers. The Doctor was in the habit of indulging himself in the extempore responses, which are practised by the devouter members of the methodist church while the clergyman is preaching. In his old age, he frequently indulged himself in these pious exclamations in the argumentative periods of the discourse, when others were not so strongly excited, and wished to attend, without interruption, to the reasonings of the preacher. Some of his friends admonished him on this subject, and he promised in future to restrain himself. But, as might have been foreseen, he became impatient under this rash acquiescence; and not long afterwards, in the midst of a sermon, becoming warmed in advance of the congregation but still recollecting his

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promise, with a *naivete* which might challenge comparison, he exclaimed—'*Amen, at a venture!*'

Fervent and uncompromising as was the devotional spirit of the deceased, it gave birth to no austerity. His was the religion of love, which delighted in the cheerfulness and innocent enjoyment of all around him. If an enthusiast, he was not an anchorite; he neither shunned nor repelled society; and few men ever attained in a higher degree, to the pleasant and benevolent manners, which should peculiarly characterize a physician and a christian. Being an acute observer, and blessed with a retentive memory, his mind was stored with interesting anecdotes and narratives, relating to distinguished persons and remarkable events; and the ease and simplicity with which they came forth in conversation, rendered an intercourse with him both instructive and entertaining. His colloquial powers were, indeed, of an original cast; & their effect was heightened by the mild but searching expression of his light blue eyes. Even in the last year of his pilgrimage, their fires were not quenched; and a gentleman, after being introduced to him, observed: 'he seemed to ask with his eyes, are you an honest man?'

As every physician ought, Dr. Hinde cultivated his domestic relations, and drew from this source copious draughts of happiness. To his children, grand children, and great grand children, he was a kind and loving father; to his wife, a lady of strong and cultivated intellect, who still lives though nearly of his own age, he was a most affectionate husband; and the only regret he expressed on the approach of death was, that he should leave behind him the companion of sixty years. An interesting display of conjugal feeling for a *nonagenarian*.

In concluding our sketch, we may be allowed to express a regret, that one endowed with so much sound understanding, quick perception, and active benevolence; favoured with such diversified opportunities, and permitted to live so long, should have left behind him none of the fruits of his ample experience. When such a man bequeaths to posterity nothing but his good name, he can scarcely be said to have fulfilled his destiny.

[Compiled *chiefly* from MSS. furnished by the family.—Ed.]

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MISCELLANEOUS INTELLIGENCE.

I.—Analectic.

1. *Blisters in the early stage of Measles.*—The *Lancet* of 27th September, contains the following communication from Mr. Matthews, member of the Royal College of Surgeons.

"I have had extensive opportunities of witnessing a great many cases of Measles with its attendants, viz. inflammation of the lungs, and continued chronic cough, and have seen it treated according to common principles, with variable success. I am therefore induced to recommend a plan of treatment which, for its simplicity and utility, I think, cannot be surpassed, having more than a hundred times adopted it, and with a success which has entirely exceeded my most sanguine expectations. I am, therefore, convinced, that the disease may be cut considerably shorter, and many valuable lives saved, to the comfort of numerous families. I do not mean to put it forth as a novelty, but so far as I have any knowledge, it has not been employed in the manner I am about to mention. It is simply this—as soon as the first symptoms of the complaint show themselves, such as sneezing with defluxions from the nose and eyes, *and before the eruption appears*, the prompt application of a blister to the chest, (of course with other suitable remedies,) seems to act like a charm, in most cases entirely preventing any affection of the lungs supervening. I have lately treated three cases, two according to the plan already laid down, and one upon the common principles of our best physcians, the parents of the child being averse to blisters. The latter is now scarcely recovered, after being ill six weeks; the two former were perfectly recovered in a fortnight. I shall not attempt to explain the modus operandi of blistering early, but the conclusions, I think, to be drawn, are these:—

1. That the disease is rendered shorter and milder; 2. That the disposition to inflammation of the lungs, and its consequences, if not entirely prevented, is very much mitigated; 3. That the patients are not more predisposed to colds or coughs, than others in whom no disease had taken place; and, 4th. That the recovery is more rapid and lasting."—*Month. Jour. of For. Med. No.* 13.

2. *Mr. Lizars' Method of Amputation.*—In amputation of the thigh, arm, and fore-arm, Mr. Lizars makes two flaps, cutting from without

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inwards, with the knife the same length as the longest used by Lisfranc, with this difference, however, that it has only one cutting edge. In amputation of the thigh, he makes the outer flap first, cutting nearly traversely to the bone, the incision pointing a little obliquely upwards towards the trunk; he then carries it along the outer edge of the bone, four or five inches, in the same direction according to the muscularity of the limb. The inner flap is made to correspond precisely with the outer; the assistant instantly grasping the inner flap, and thus completely commanding the artery; so that, if the operator chooses, he may with safety perform the operation without a tourniquet.

The superiority of this mode of amputation over that of transfixion, is said to be, that the surgeon can lengthen his flaps as much as he pleases, even in the middle of the operation, if he considers them too short to cover the bone; besides, he cuts in the same line of direction; whereas, in transfixion, he cuts first from, and then towards himself. In this mode also the flaps are much fuller and thicker; and no lower third flap can possibly remain as in transfixion.—*Ibid.*

3. *Mercury.*—M. Colson, surgeon to the Hotel Dieu de Noyon, who has long been engaged in investigating the effects of mercury upon the system, has recently succeeded in detecting the presence of this mineral in the blood of persons to whom it had been administered. In one instance, a young man had swallowed, by mistake, four or five ounces of the liquor of Van Sweiten; violent fever supervened, requiring venesection. Furnished with a plate of burnished brass, M. Colson directed the jet of blood upon it, and left it in the basin for the space of twenty-four hours, at the end of which time, mercurial stains upon the brass became evident. A similar result was obtained in the other instances. Fourcroy relates in his translation of Ramazzini, that the serum having been collected from a great number of phlyctenæ, which appeared upon the thighs and legs of a gilder, an infinite number of mercurial globules was found in the bottom of the vessel containing it. M. Gaspard has found them in the alvine evacuations; Petronius in the matter ejected by vomiting, where the mineral had been employed in frictions; Rhodius, Breyer, Valvasor, Guidot, Vercelloni, Burghard, Didier, Haeschtter, and recently Dr. Cantu of Turin, in the urine. It has been found in the bones, synovial membranes, in the pleura, and in the lungs. In our own day, M. Dumeril has found it in different parts of the body; MM. Orfila and Pickel have obtained it by distillation of the substance of the brain and nerves; and it is stated in the last number of the *Bull. des Sciences Medicales*, that Professor Hunefield of Griefswold, has found it in its metallic state in the semi-liquid contents of a lipoma.—*Ibid.*

4. *Treatment of Dropsies.*—The September number of the *Revue Medicale* contains some observations by M. Guibert on the appli-

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cation of the *methode iatraleptique* to the treatment of dropsies, and particularly of ascites.

This method consists in the employment, two or three times a day, of frictions with the following liniment upon the thorax, abdomen, or legs, according to the seat of the disease. Tincture of squills of digitalis, and of colchicum seeds, each half an ounce; camphorated and ammoniated oil, an ounce and a half. The frictions to be made with a woollen or flannel cloth, and to be continued from five to twenty minutes, according to the quantity of fluid extravasated, and the urgency of the symptoms. Diuretic beverages, and pills, composed of squills, digitalis, &c. are at the same time given internally. This treatment will, of course, be varied according to circumstances; it may be sometimes advisable to suspend it for a time, or to conjoin it with demulcents, gentle laxatives, enemata, &c. &c. and if the dropsy be recent, and the cause producing it be known, its removal by appropriate means should constitute the first indication.

The *methode iatraleptique*, observes M. Guibert, such as I employ it in the treatment of dropsies, has especially appeared to me very advantageous in ascites; and it is principally to the use of the liniment above mentioned, that I attribute the success which I have met with in the cure of that disease. The remedies given internally, have been highly useful as auxiliaries, but alone, were insufficient to produce the profuse urinary discharges, I might almost say, the artificial diabetes, which I have observed in different cases, and the rapid disappearance of the great extravasations which I have had to treat. A number of cases, corroborative of the efficacy of the plan, is related, from which M. Guibert deduces the following conclusions:—

1. The cases above mentioned, and I might adduce many others, evidently prove that diuretics, when opportunely administered, and in sufficiently large doses, are, of all the remedies used in dropsy, those which are most uniformly successful.

2. The iatraleptic method, or the use of frictions, is one of the most advantageous modes of employing these medicines, inasmuch as they thus act upon a large surface, and do not fatigue the stomach.

3. It is, nevertheless, always useful to associate with it internal remedies, in order to obtain a more prompt effect.

4. This combined treatment is sufficiently active to produce, in a very short space of time, the diminution of a dropsy which has reached a considerable volume, and thus to obviate, in many cases, the necessity of paracentesis; an operation almost always merely palliative, and which must be repeatedly performed, at intervals more or less protracted, in order to prolong the existence of the patient; whereas, by the persevering employment of the plan which I have advised, we may expect to produce the complete absorption of the effused fluid.

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5. Finally, this method is attended with no inconvenience, provided the inflammatory symptoms, if any exist, have been previously removed by appropriate means. In cases complicated with organic alterations, it will even succeed in exciting the absorbent and urinary systems, although the primitive cause of the disease still exists, and sooner or later must occasion its re-appearance. In simple ascites on the contrary, and in anasarca, or œdema of the lower extremities, its success is almost infallible.—*Ibid.*

5. *Puerperal Insanity.*—From 57 cases of this malady treated by Dr. Burrows, he deduces the following corollaries:

1. That mania is a more frequent consequence of lying-in, and the process of lactation, than any other variety of mental derangement.

2. That puerperal insanity occurs from the age of twenty to thirty in the proportion nearly of two to one, at all other ages.

3. That in London, physical causes much more frequently originate puerperal insanity than moral causes, the physical being to the moral as ten to one.

4. That the access of puerperal insanity happens before the fourteenth day in three out of five cases.

5. That it happens between the fourteenth and twenty-eighth days, in one out of about six cases and a half.

6. That nearly four in five recover their intellects.

7. That not more than half recover in six months.

8. That those recover soonest whose delirium supervenes on the process lactation.

9. That the maniacal form ceases sooner than the melancholic.

10. That the mortality is *apparently* but not *really* double Esquirol's return;* and that the greater number of deaths occurred before the second week from delivery.

11. That half, and possibly more, if the truth could always be discovered, attacked by puerperal insanity, prove to possess an hereditary predisposition.—*Commentaries on Insanity.—Ibid.*

6. *Case of Tetanus, with Inflammation of the Spinal Chord, and disease of the Anterior Roots of the Spinal Nerves.*—This case, which occurred at Udina, is strongly in favor of the opinion, that the cause of tetanus is inflammation of the spinal chord; it also confirms Mr. Bell's idea, that movement depends on the anterior, and sensation on the posterior, roots of the spinal nerves.

A woman, of 40 years of age, felt, in consequence of over exer-

*There were only six deaths in 92 cases recorded by Esquirol, and as not one of them occurred till more than six months from the access of the insanity, Dr. Burrows attributes the difference to their having all become chronic, and taken in the aggregate he observes, they do not give a greater rate of mortality, than is allotted to the same number who are insane from other causes. Of the 57 cases mentioned above, ten terminated fatally.

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tion a difficulty of moving the lower jaw, a stiffness of the neck, and a tensive pain in the limbs. On the ninth day, after the first appearance of these symptoms, she was taken to the hospital; tetanus and trismus were then fully developed: the former in the form of emprosthotonos. Warm baths seemed to diminish the spasmodic affection of the jaw, but that of the trunk increased, and carried the patient off on the twelfth day. On examination after death, the brain was found in a healthy state; the vertebral canal was filled with a bloody serum; the anterior portion of the spinal chord was of a yellowish dirty white colour, and covered with small, round, and oval hydatids, from the size of a millet seed to that of a pea; its substance exhibited reddish spots; the posterior part was healthy; the posterior roots of the spinal nerves had a very different appearance from the anterior roots; the latter were evidently softened, and presented a yellow colour: the former were perfectly healthy.—*Lancet.*

7. *Difference of the Blood in the Veins and Capillary Vessels.*—The October number of the *Journal de Chimie Medicale*, contains some experiments by Dr. Pallas, which go to establish what might *a priori*, have been supposed, but what, previously to the researches of this gentleman, had not been the subject of direct experiment, namely, that the blood in the capillary system, is more highly animalized than that contained in the veins, being heavier, of a brighter colour, more odorous and viscous. The following is an abstract of the experiment referred to.

A man who had had tertian fever for six days, during the greater part of which time he had been strictly dieted, was bled from the arm, while, at the same time, twelve leeches were applied on the right, and three cups on the left side of the epigastrium. A vessel filled with the venous blood as it flowed from the arm, weighed 19,950 grammes; the same vessel filled with the blood drawn by leeches, weighed 20,450 grammes; an equal quantity taken by means of cupping weighed 20,400. The venous blood had a deep black colour, and separated in a few hours into crassamentum and serum; that drawn by the leeches, was more viscous, presented a bright red color, and exhaled an odour resembling that of a mixture of bile and urine; the crassamentum was larger than that formed from the venous blood. The blood obtained by means of the sacrificator, had a deep red colour, was viscous, and exhaled a well marked bilious odour. The serum of the three kinds of blood was clear and transparent; that which was furnished by the blood drawn by the leeches, was red, and of a deeper color than the others. Treated separately with an ounce of distilled water, the three specimens were subjected to ebulition to coagulate the albumen, in order to appreciate more correctly the proportion of the liquid to the solid parts. The following was the result obtained. Solid parts of the venous blood well dried, 2,550; of the blood drawn by leeches, 3,100; of the blood obtained by cupping, 3,000.

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The subject of the second experiment had had, for several days an intermittent gastric affection, accompanied with general irritation of the vascular system. The vessel above mentioned filled with blood as it flowed from the vein, weighed 20,350; an equal quantity taken, not as in the preceding experiment, from that which the leeches had sucked, but collected after their fall from the bites which they had made, weighed 20,750: in this instance also, the latter was heavier, more coloured, odorous, and viscous than the former. Treated with water as before, the venous blood gave of solid parts 2,550; that taken from the capillary vessels, 2,630.

In a third experiment, which was accidentally interrupted, the blood drawn from the vein, and from the capillary system, weighed respectively 20,700, and 20,950; as in the other experiments, the latter was also more highly coloured, more odorous, and viscous than the former.

It is to this difference of chemical composition, observes M. Pallas, that we must attribute the preference given by physicians to local bleeding in a variety of cases. Although many causes must concur to vary the proportions of the constituent principles of human blood, such as age, sex, temperament, constitution, manner of living, health, disease, &c., &c.; the difference which we have pointed out must be uniform in the same person, and explains the important rank accorded to the blood of the capillary vessels, in the production of the phenomena of life.—*Month. Jour. For. Med. No.* 14.

8. *Cure of White Swelling by Frictions of Iodine.* By Dr. Lugol.—The use of iodine in scrofulous tumours is strongly recommended by the most eminent French surgeons. M. Breschet, in his lectures, speaks of it in the highest terms. The same treatment is pursued with advantage at the Hospital St. Louis, from the records of which a recent cure of white swelling and tumour of the jaw may be cited as a proof of its efficacy.

The patient had white swelling, with fistulous ulcers on the knee, the leg was bent on the thigh, and utterly useless. He had also a large tubercular tumour on the right side of the face, which seems to have its origin over the maxillary joint. The swelling was such that the man could scarcely open his mouth, and the flat edge of a penny-piece was the largest substance he could introduce between his teeth. These tumours have entirely disappeared under the use of Iodine frictions.—*Jour. de Hopitaux.—Ibid. No.* 15.

9. *Extirpation of the Uterus.*—This operation has been performed under different circumstances, which require to be distinguished, to prevent the results in one class of cases from influencing our estimate of the operation in cases which are dissimilar.

1st. Oslander performed the excision of the neck of the uterus, and M. Lisfranc has repeated it so often, that there can be no doubt of its being in many instances an operation without pain or danger,

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No one, however, who knows the subject accurately, can read these cases without seeing that the operation was in the great number of instances unnecessary, from the absence of malignant disease, while in those cases in which such disease was present it was unsuccessful. What is called cancer of the uterus is seldom or never so confined to its neck that the removal of this part will remove the disease; and all that these operations prove is, that the operators know little of the disease which they imagine they are extirpating, and that the excision of the neck of the uterus is not attended with so much danger as might have been anticipated. Let not, however, the impunity with which the neck of the uterus has been removed, be confounded with the result of extirpating the whole organ—they are entirely different operations; and what is true of the former, throws no light on the latter.

2dly. Cancer has occurred conjoined with a complete collapse of the uterus, so that the whole organ has protruded externally, and has been removed by a ligature round the inverted vagina, above the tumour. As this compound case occurs very rarely, this operation very seldom admits of being performed.

3dly. The inverted uterus has been removed successfully by ligature. In this operation it is the fundus and part of the body only, which are removed; the rest of the body and neck, through the orifice of which they had protruded, being left behind.

4thly. The whole uterus, in its natural situation, has been removed in a considerable number of cases on the continent, and lately by Dr. Blundell in this country. A month or two ago this enterprising practitioner favoured us with the details of a successful case, which has produced a strong sensation among the practitioners of England. We learn, on unquestionable authority, that he has since then performed the operation again, and that the patient died, (it is said of hemorrhage,) within six hours afterwards. We know, on equally good authority that he had performed the operation some time before the successful case, and that the patient died soon after in a state of collapse, without any hemorrhage to explain it. Of the three operations, therefore, which Dr. Blundell has performed, only one has been successful,—the two others being followed by the speedy death of the patients.

In our last Gazette we published a case in which this operation was performed by Mr. Banner, the surgeon of Liverpool; and in which the woman died on the fourth day after the operation. We applaud the conduct of Mr. Banner on this occasion—not merely for the dexterity with which he seems to have operated, but for the courage and candour with which he comes forward and publishes an unsuccessful case.

The extirpation of the whole uterus has now been performed in England four times within the two last years; three times by Dr. Blundell, and once by Mr. Banner of Liverpool: of these cases one only has recovered; the three others have lost their lives. It is im-

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portant this should be known, that those who venture on the operation may be fully acquainted with the slight chance which it affords of success. The extirpation of the whole uterus may be called the forlorn hope of surgery—a kind of lover's leap; in which most of those who take it perish in the attempt, but those few who escape alive are cured.

We sincerely hope, and fully expect, that Dr. Blundell, having published his solitary case of success, will publish also his two unsuccessful cases: for on such a subject, not only the truth, but the whole truth ought to be told, in order to guide the profession right in so difficult and important a question. It may be some time before he has leisure to draw up an account of the particulars; in the meanwhile this general statement may supply its place, and is especially necessary, because cases are continually occurring in which the propriety of performing the operation will have to be discussed, and which renders an accurate estimate of its dangers of the utmost value. Let it be remembered that out of four cases in which the uterus has been extirpated in England three have proved fatal.*—*Lon. Med. Gaz.*

10. *On the Coagulation of the Blood*—Dr. JOHN DAVY relates a number of interesting experiments on this subject in the *Edinburgh Medical and Surgical Journal*, for October, 1828. The following are his conclusions. 1st. The coagulation of the blood takes place independent of motion, and it is very little affected by motion, whether violent or moderate; 2dly. That it is not caused by the action of atmospheric air, or much affected by any kind of air that is not absorbable in water; 3dly. That it is not retarded by the introduction and absorption of carbonic acid gas; and lastly, That the action of reagents on the blood, or the fibrin of the blood, as regards coagulation, is exceedingly various not to be anticipated *a priori*, and inexplicable on any one hypothesis hitherto advanced, the effect of each of them requiring special consideration, and further and minute experimental enquiry for its elucidation.—*Am. Jour. Med. & Phy. Sciences. No.* 6.

11. *On the Diseases of the Kidneys and Ureters.* By J. BOUILLAUD, M. D.—Dr. B. has frequently met with *hypertrophy of the kidneys*, it generally occurs only in one of these organs. It is recognized, according to Dr. B. by the following appearances. The kidney is a quarter, or a third, or perhaps even one half, larger than the natural size. Its substance is firmer, more compact, and redder. It is probable that in such cases the renal artery is enlarged, although this fact has not been determined. Hypertrophy of the kidney occurs under the influence of various causes, which determine to it an unusual quantity of blood. The most likely circumstance to produce this kind of plethora in one kidney is the exist-

*Since writing the above, we have heard that the operation has been performed in Edinburgh, by Mr. Lizars.

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ence of some obstruction to the passage of the blood towards the other. It happens, consequently, that hypertrophy of one kidney is frequently detected when the other is in a state of atrophy. Hypertrophy of the heart and of the external muscles, take place equally under the same conditions which preside over the increased size of the kidney.

Atrophy, or diminished nutrition of the kidneys.—This disease M. B. has frequently seen. Its characters are diametrically opposite to those of hypertrophy of the organ. The size of the kidneys is less than natural; their substance is paler; they contain less blood and appear shrunk. Whatever cause obstructs the current of blood to the kidneys, may produce an atrophy of them. In every such instance, M B. has been able to demonstrate a greater or less obstruction to the free circulation of the blood. The pressure of an enlarged spleen has sometimes produced atrophy of the left kidney.—The right kidney has been similarly affected by the continued, yet gradual, pressure of an ealarged liver. In other organs as the heart, the lungs, the breast, the testcle, pressure frequently causes the same diminution of size.

Infiltration of urine, and cysts of the kidneys.—M. B. observes that no pathologist has hitherto described this affection; it is not, however, very rare, but it may easily escape the observation of a careless practitioner; the following are the characters of it: on the surface of the kidneys may be seen several round vesicles, which raise the covering membrane of these organs. These vesicles appear to be small cysts in the substance of the kidney, and are probably formed by a certain quantity of urine, which has distended the uriniferous tubes, in consequence of some obstruction to the passage of the fluid. M. B. has seen some of these cysts as large as a cherry. Sometimes, instead of numerous vesicles, he has detached one large sac, which he presumed to have been formed from the union of several smaller ones, of which the parietes had ruptured. He has found the whole of the kidney transformed into one large sac, containing either a transparent serous or turbid fluid.

Inflammation of the kidneys, and of the disorganization which follow inflammation.—In consequence of their peculiar structure, the kidneys do not easily become the seat of those disorganizations which result from inflammation. Nephritis is marked by the following appearances: redness, tumefaction, presence of pus, softening of the structure of the organ, abscesses, ulceration of the external surface, conversion of the parenchymatous substance into a tuberculous or encephaloid matter, which is in a great measure, the product of the diseased secretion of the affected kidney. Cysts, either on the surface, or in the substance of the kidney, may result from inflammation. In two or three cases, M. B. has found the kidney converted into a fatty yellowish substance. The symptoms of the various ulcerations which the kidneys occasionally undergo, are very obscure; this circumstance will not be considered so extraor-

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dinary when we consider, first, that the deep-seated situation of the kidney embarasses our examinations; secondly, that derangement of the function of the kidneys produces similar symptoms to those which result from various affections of the bladder and ureters; thirdly, that pain is by no means a constant attendant upon renal disease. If we are to rely upon the statement of most pathologists, acute pain is the almost inseparable attendant upon inflammation of the kidneys; it is not denied that such is frequently the case, but M. B. affirms that he has observed the most decided marks of renal inflammation in the bodies of patients, who had never complained of pain in the region of the kidneys. This absence of pain may be more easily conceived, when we reflect that the kidneys in a natural state are but slightly sensible. Violent pain is not seldom complained of in the region of the kidneys, when no disease of them is to be detected. The presence of a certain quantity of blood or pus in the urine, when there exists no disease of the bladder, is a symptom of some affection of the kidney; when to this symptom is united a smart attack of fever, the existence of nephitis may be strongly presumed. At the commencement of the disease, if both kidneys are affected, an almost total suppression of urine takes place. Chronic nephritis, like most other internal inflammations of a chronic character, produces a slow fever, which destroys the patient by throwing him into that state termed renal consumption. When the effected kidney continues the performance of its functions, the urine is much altered in its appearance, but sometimes it ceases to secrete; the urine being formed only by the healthy kidney, presents no unusual appearance, and the diagnosis of the disease is then extremely difficult. If both kidneys are simultaneously disorganised, so that a total cessation of the secretion of urine takes place, the same phenomena will occur as we observe in animals in which both ureters are tied, or both kidneys removed; violent fevers quickly arise, and a strong smell of urine is exhaled from the body. Is hypertrophy of the kidneys ever the cause of diabetes? M. B. is not furnished with sufficient facts to justify him in giving a positive answer to this question, but he has observed hypertrophy of the kidneys where the patient had been affected with diabetes. The ureters, like all other parts of the body, may suffer from inflammation, and undergo various alterations of structure in consequence; their canals may be much enlarged, diminished or entirely obliterated; dilatation of the ureter may arise from any cause which obstructs the free passage of the urine into the bladder; contraction or obliteration may follow from any accidental compression, from inflammation of the internal membrane which lines the cavity, or from the cessation of the passage of the urine through the canal, from the function of the kidney being no longer performed in consequence of disease. The symptoms of affections of the ureters are as obscure as those which attend diseases of the kidneys. If both canals are obliterated at the same time, death would speedily result; but if one uterer only is obstructed, the cali-

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bre of the liver will be increased considerably, from the additional duty which it will have to perform under such circumstances. In support of these observation, M. Bouillaud details several interesting cases.—*Journal Complementaire, July*, 1828.—*Ibid.*

12. *On the Use of Circular Ligatures in Intermittents.*—About thirty years ago the application of the tourniquet was recommended by Mr. Kellie, a naval surgeon, as a preventive of the paroxysm of intermittent fever, and several instances are recorded by him in Duncan's Medical Commentaries, for 1794, in which he used it with success. He applied the instrument to the arm of one side, and the thigh of the other. Some further experiments have recently been made by Dr. Robouam, on the anti-febrile powers of circular ligatures, and the result is favorable. The ligatures were applied to the arm, and made sufficiently tight to interrupt the superficial circulation, and to retard that of the more deep-seated vessels. As soon as the extremities began to redden, the patient felt easier, and the symptoms of the approaching paroxysm abated; the cold and trembling ceased; the pulse became more free, &c. Nearly in all the cases Dr. R. found two or three applications of the ligature were sufficient to suppress the fever.

According to Dr. R. the following rules are to be observed: 1st. The most favorable time for the application of circular ligature is the beginning of the cold stage, when they seldom fail to suppress or mitigate the fit. They have much less effect in the middle of the paroxysm, and none at all during the intermission. 2d. In case of syncope, the ligatures must be loosened; the patient usually bears them better after some time. 3d. If the ligatures are too tight, they may produce dangerous symptoms, and even suffocation. 4th. The application of circular ligatures has an effect corresponding to bloodletting.—*Ibid.*

13. *On certain methods of treating Chronic Inflammations of the Eye, lately adopted at the Royal Westminster Ophthalmic Hospital.* By G. J. Guthrie.—Mr. Guthrie says that he has been employing with advantage the following remedies in chronic ophthalmia:—

1. ℞. Argenti Nitratis, gr. ij. ad gr. x.; Liq. Plumbi Subacet. gtt. xv.; Ung. Cetacei 3j.

2. ℞. Hydr. Oxymur. gr. iij. ad iv.; Liq. Plumbi Subacet. gtt. xv.; Ung. Cetacei 3j.

The argentum nitratum and oxymuriate of mercury must be reduced first to an impalpable powder, then mixed with the ointment on a slab, and the liquor plumbi added. It may be done in a glass mortar. A double decomposition takes place in either ointment, which naturally diminishes the strength of each; but this change takes place slowly, particularly in the oxymuriate ointment, so that weeks elapse before they become inert. A very sensible difference is felt by the patient between an ointment only two days made, and anoth-

er of two or three weeks standing, and the stimulating qualities may be calculated according to the state of the eye, as well as the strength of the composition. The argentum nitratum ointment is gray when first made, but soon changes its colour to a brownish-black. If the argentum nitratum be mixed with the ung. cetacei, (as I once used it,) without the liquor plumbi, it dissolves more rapidly; when used, the powdered nitrate falls into the fold of the conjunctiva, or rests on the lid, and is apt to cause a slough, which is prevented by adding the lead.

The manner of using the ointment is "by introducing between the lids a portion, larger or smaller, as the case may seem to require it, from the size of a large pin's head to that of a garden pea. The eye lids being closed, are to be rubbed gently with the finger, so as to diffuse the dissolving ointment over the whole surface of the conjunctiva; a part of it usually, however, works out by the motion of the lids, and should be wiped off, (if the nitrate of silver,) to prevent its staining the skin. Both ointments cause pain: in some persons it is considerable, in others less so, lasting from half an hour to an hour and a half; and when the ointment is newly made, sometimes for four hours, and even until the next day. On the subsidence of the pain caused by the ointment, that which previously existed is found to be relieved, if not entirely removed; and on the subsequent day, the patient usually acknowledges the benefit he has received, with regard to all the symptoms. When the application has been severe, and the patient very irritable, a state resembling white chemosis, occasionally takes place, and appears formidable to a person unacquainted with the effect of the remedy; it soon, however, subsides. The eye should be fomented with warm anodyne fomentations.'

Mr. G. rarely repeats the application until the third day, 'but the feelings of the patient are the best guide, the return of some of the old sensations indicating the necessity for its use, which should be, if possible, anticipated. In some cases of acute inflammation, two or three applications will arrest the progress of a serious disease, and effect a cure. In chronic cases, the ointment must be continued for a considerable time, and occasionally alternated with other remedies. Where they create a state of regularly increasing irritation, as they sometimes will do, cupping, purgatives, &c. are of service; when the remedies may again be resorted to.'

Several cases are related by Mr. G. in which these applications appear to have been strikingly beneficial.—*Lond. Med. and Phys. Journ. Sept.* 1828.—*Ibid.*

14. *Remedy for opacity of the cornea.*—The following combination is recommended in the *Journal de Chimie Medicale, &c. for September*, 1828, as an useful application to promote the absorption of the effused lymph in opacity of the cornea. ℞. oxyd. hydrar., rub., agaric., alb. $\overline{aa}$ ℥ss. Sacch. alb., ℥j. misce intim. et pulv. subtil. A small portion to be blown into the eye daily.—*Ibid.*

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15. *Signs of Drowning.*—M. Orfila has made a great number of experiments with the view of determining whether submersion has taken place prior or subsequent to death—an important decision in legal medicine. The following are the inferences which he has drawn.

1. That the red, livid, and swelled condition of the face, with froth at the mouth and nostrils, which some authors have laid down as indicating that the submersion has taken place during life, leads to no such inference, as it is wanting in many who have been drowned, and is present in many who have met their death by other means.

2. That the same remarks apply to extreme paleness of the face which is an effect of the body remaining long in the water. M. Orfila here describes the alterations which the skin undergoes in those who have been long submersed. He asserts than on the legs the integuments become indigo colour, and then brownish on exposure to the air, while the rest of the body is very white, but the moment it comes in contact with the air, it is successively converted into brown and green, commencing at the chest. Remaining long in the water also brings on abrasions of the skin, which may give rise to the idea of wounds having been inflicted.

3. Excoriations of the fingers and traces of dirt under the nails are of no assistance, because they are wanting in those who are drowned before they come to the bottom, while they may be present in a body which, being thrown into a river strikes against va ious obstacles.

4. Injections of the brain and its membranes, M. Orfila thinks would be a satisfactory indication of drowning, if it were proved that the body became cold in a vertical position. As, however, this sign is frequently absent in those who have been drowned, so it cannot be regarded as a positive proof.

5. In those who have been drowned, the right cavities of the heart, the venæ cavæ, the pulmonary veins and arteries, are generally distended by a quantity of black blood, while the left side of the heart and the aorta are much less filled: the right ventricle is of a blackish brown; the left of a clear rose colour; and the right cavities retain a less contractile power than the left. This condition, however, is met with in many cases of sudden death.

6. Although the blood is generally fluid, yet M. Orfila has seen it coagulated in one individual who was drowned: a fact also observed by Lafosse, and more recently by M. Avissard.

7. The dissection of more than fifty persons who had been drowned, has satisfied M. Orfila that it is a mistake to suppose that in drowning the individuals die during inspiration, and that, in consequence, they have the diaphragm pushed into the abomen, and the chest elevated.

8. He regards the colour of the abdominal viscera as indicative of asphyxia in general, but not of drowning in particular.

9. The experiments of Orfila, and some other physiologists, show that water enters the stomachs of those who drown themselves; while this is not the case with regard to bodies thrown into the water.

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proved that the water had neither been swallowed before death, nor injected after it.

10. It is not true that the epiglottis is pushed down upon the larynx.

11. Great importance had been attributed to the presence of sanguineous froth in the windpipe. M. Orfila objects, however, that this exists in other cases, as in death from epilepsy and hanging; while it is wanting in the drowned who have remained long under water, without coming to the surface to breathe.

M. Orfila made a considerable number of experiments to ascertain if water enters into the ramifications of the bronchia of the drowned; and he has always found that the fluid entered the lungs of the animal, and that the quantity was greater or less in proportion to the care took to keep the head erect in lifting the animal out of the water. But the fluid is not found in the air-passages, if the examination be made soon after death. As to the question, whether the water enters the lungs after death, the experiments of M. Orfila agree with those of M. Piorry, proving that it does enter, and more completely the more vertical the position of the animal; and consequently, the presence of water is not a sufficient proof of drowning, as water enters the air-passages of the dead body, and that the only absolute sign is the presence of water in the minute ramifications of the bronchia: it being proved that this water is the same as that in which the individual was immersed, that it had been injected after death, and could not have penetrated to the lungs from the vertical position of the body in the liquid."—*Med. Chir. Rev. Aug.* 1828.

II. Analytical.

16. *Removal of loose substances from the knee joints.* By Charles Averill, Esq. Surgeon.

It frequently happens, that the laced bandage recommended by Mr. Hey, to confine loose masses of cartilage to one spot in the joint, are inefficient; and the extraction of them is then necessary. In the usual mode of operating, however, an excessive quantity of synovia is sometimes lost, and as the body floats from one part to another, there is no certainty of our being able to extract it through the incision which may be made for that purpose.

Mr. Averill (London Medical and Physical Journal,) has ingeniously contrived to obviate these difficulties. He found that by placing around the cartilage, when it was protruded from the joint, an iron ring, he could effectually confine it

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to one spot, and by cutting upon it, within the ring, could with certainty extract it, with a very inconsiderable loss of synovia. Still further, to obviate such a loss, and exclude the external air from the cavity of the joint, he advises that the skin should be pulled aside as far as possible, so that when the operation is finished, the incision into that part will not lie over that in the capsular ligament. Mr. A. has published a case in which his operation was perfectly successful.

17. *Acetate of Ammonia in Uterine Diseases.*—Few diseases, not fatal in their tendency, prove more obstinate, and inflict greater pain, than dysmenorrhœa; while its general effect, sterility, gives to it a distinct quality of evil. Every physician must have been disappointed in the effects of the remedies which are in common use for this malady, and be prepared, therefore, to adopt any new recipe.

Sometime since Mr. Cloquet, of Paris, published an account of a case successfully treated with acetate of ammonia. Subsequently Professor Mazuyer of Strasburg, presented the profession with a favourable report of his trials with the same medicine. More lately Dr. Patin, in the Arch. Gen. de Med. has made a publication on the powers of the acetate in several different forms of uterine disease. His memoir concludes with an enumeration of the diseases of the uterus, to which he considers the acetate applicable:

1st. To cases of painful menstruation, though some degree of care is required in its employment, since it diminishes the quantity of the discharge.

2d. To cases of profuse catamenia and uterine hemorrhagies, affections in which he has obtained the most remarkable results.

3d. To cancers of the uterus, in which disease it will prove at least a powerful palliative.

4th. To nymphomania. Its supposed efficacy in this affection rests upon its influence in case fifth.

It is also recommended in threatened abortion, when this accident is constitutional, and depends upon a too great determination of blood to the uterus; in inflammation of uterus and ovaries; in the different organic lesions of these parts; in a word, in every case in which there exists sur-excitation of the genital system of the female. Care, it is stated, will be required, lest the uterine action be reduced below its natural standard.

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Before meeting with the report of Mr. Cloquet, we had used a solution of the acetate of ammonia, as a vehicle for the compound tincture of guaiac, in a case of dysmenorrhœa; and thought the prescription more beneficial, than when the tincture was given in wine, milk, and the other liquids generally employed to dilute it.

It should be recollected that the old fashioned Spiritus Mindereri, is substantially a solution of the acetate of ammonia, and may be substituted for the officinal preparation by those who cannot conveniently obtain the latter.

18. *Hydrocyanite of Iron, in Epilepsy and Chorea.*—In the transactions of the Royal Academy of Medicine, of Bordeaux, for 1827–8, several cases have been published, illustrative of the efficacy, in epilepsy and chorea, of the hydrocyanite of iron. The medicine was used under considerable diversity of age, temperament, duration of the disease, and state of the arterial system. The dose was half a grain at the beginning, in the form of a pill, gradually increased up to twelve grains a day. We are indebted to the Journal of Foreign Medicine for an abstract of these cases.

19. *Amputation*; *Circular and Flap Operations.*—In No. 5, vol. II. of the Bost. Med. and Surg. Jour. we find the report of a case of *Fungus hæmatodes*, in which the thigh was amputated, by the distinguished Professor Warren. At the end of the article, the reporter takes the opportunity of stating the comparative estimate, in which the circular and the flap operations, are held, in the Massachusetts General Hospital. Cherishing the highest respect for the skill and science of Dr. W. we transcribe the following paragraph, for the information of our practical readers:

The circular and the flap operation of the thigh have been tried alternatively at the Hospital for some time back. On a review of these operations, the preference is given to the circular, for the following reasons:—1st. The wound made in this mode is not so vast. 2d. The hemorrhage is less. 3d. The incisions are more regular and precise, than in the flap operation. 4th. The constitutional affection, and, of course the danger is less in the circular, than the flap

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operation. The last can be done quicker, and makes a good stump. These advantages do not overbalance the objections. Whether the operation is a minute and a half, or four minutes in duration, is not so important as that the patient's safety should be ensured. When the operation is done, as a above described, all the incisions are smooth and exact; not the least irregularity of muscle appears on the face of the stump; and the covering of muscle, celular membrane, and skin, is as perfect as possible.

20. *Spina bifida.*—Having lately heard of a case of this disease in our own city, in which the attending physician opened the sac with a common lancet, and the child died; we are induced to recal the attention of our readers to the most approved method of treating this congenital malady. The following are the remarks of Dr. Blundel, in his lectures at Guy's Hospital:

Infants may be affected at birth with dropsy of the spinal theca, occurring with variety in the anatomical condition of the parts. Sometimes the dropsy is in the theca wholly; sometimes in the theca and the cranium too; and the dropsies may communicate. The spinal marrow may, I believe, be perfect, or the cauda equina may be more or less deficient; the nerves of the lower limbs and pelvis being formed, nevertheless, in all their perfection, and stretching into the cavity of the spine to terminate, as Burns has justly stated, not in the marrow, but in that part of the theca which lines the corresponding arches of the lumbar vertebræ; the nerves, in fact, originating, or rather coalescing, at the theca of the spine. When the arches and spinous processes of the vertebræ are wanting throughout the chain, so that the spinal canal is completely open behind from end to end, the spinal marrow is, I suspect, generally deficient altogether; and, indeed, the disease scarcely belongs to that which I am now considering; but in spina bcfida generally, there is a deficiency on the back of the lumbar vertebræ only, forming a chasm, at which one or two fingers may be passed down into the cavity of the spine; and above, and perhaps below, to some little extent, the spinous processes separate into two lateral pieces, so as to become forked, whence the disease is frequently denominated spina bifida. "Dum res manent fugiant verba." The appellation is not, perhaps, a good one; but if we understand one another, the terms may pass. Life is short—our time may be laid out on more important matters. Over the lumber chasm, we may find the parts in one or two very different conditions; for sometimes on this part there is a large tumor, bulky as a small orange, covered with a dark rosy red skin, marbled with a leaden livid tint; and, in other cases, we find upon the chasm a circular brown wrinkled scar, broad as a half crown.

and flat. An infant may be born with this tumor lacerated and open. Hydrocephalus, in conjunction with this disease, may become very obvious, in consequence of the enlargement of the cranium, and the widening of the sutures and the fontanels. Mr. Bryant, of Kennington, showed me a fine example of this.

If the medulla spinalis be defective, I presume the case admits of no effectual remedy; but when this is sound, and the disease is, in other respects, favourable, a cure is not impossible; and for this, as for some other useful practical additions to surgery—surely well worth whole volumes of mere musical and well-turned periods—our race is indebted to a man whose name conveys his eulogy,—I mean Sir Astley Cooper. To him, and to my distinguished colleagues, his successors, I must refer you for a fuller exposition of the method of operating; suffice it to remark, that the tumor is punctured with an instrument like a glover's needle, and day after day, by little and little, the fluid is gradually drawn away; the aperture being secured, more or less effectually, after every drawing and pressure being kept up by means of bandage, or otherwise. Forty or fifty times, as I learn, it may be necessary to repeat the punctures; the cyst filling repeatedly, but continually shrinking, till, at length, after a succession of operations, the cyst contracts into a sort of cicatrix lying over the chasm, to be afterwards protected by truss. To open the cyst extensively, and discharge the water at once, is, I believe highly dangerous. In the course of twenty-four hours, death ensued in a case of this kind, narrated to me by one of my pupils. The tumor was mistaken for abscess. The cases with the brown flat scar are are not fit for this operation. In hydrocephalic cases, there is little to be hoped. Infants left to their fate, in this disease, perish after different intervals. They may live for weeks, months, or years. They may even reach to man's estate, always laboring under the disease. If the marrow be defective, the lower parts of the body may be defective in feeling. Dr. Haighton used to relate the case of a boy, who would thrust pins into the skin with little suffering. Acupuncturation sometimes occasions little pain, even in the healthy.

TRANSYLVANIA UNIVERSITY.

21. At a public commencement held in the Chapel of the University, on Tuesday the 10th of March, 1829, the degree of Doctor of Medicine was conferred on the following gentlemen, alumni of the School, who had undergone satisfactory examinations before the Medical Faculty, Trustees and President, and written Theses on subjects annexed to their names.

FROM KENTUCKY.

ROBERT STUART APPERSON, of Richmond *on Sarcocele.*
JOHN CHARLTON BEATTY, of Mason C. *on Paracyesis Abortus.*
RICHARD WILLIAM FERGUSON, of Louisville, *on the Physiology and Pathology of the Teeth.*

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Charles Hay, of Fayette County, *on the Anatomy and Physiology of the Stomach.*
Henry Hopson, of Christian County, *on Menstruation.*
John Terrel Lewis, of Lexington *on Milk Sickness.*
Preston Lindsay, of Scott County, *on the Identity of Summer, Fall, and Winter Epidemics.*
Thomas Jefferson Moore, of Bowlinggreen, *on Erysipelas.*
Alexander Hamilton Peck, of Lexington, *Phthisis Pulmonalis.*
James Ritchie, of Lexington, *on Hydrocele.*
Thomas Stevenson, of Meade County, *on Syphilitic and Pseudo-syphilitic affections.*
Robert James Waggoner, of Columbia, *on the Functions of the large Intestines.*
Henry Francis Washington, of Russelville, *on Dyspepsia.*
Walter Carr Winter, of Lexington, *on Ophthalmia purulonta.*

MISSISSIPPI.

Charles W. Harris, of Pike C. *on Lacteal and Venous Absorbtion.*
Charles Shaw, of Jefferson County, *on the Nature and Treatment of Syphilis.*
Solomon Tracy, of Meadville, *on Uterine Hæmorrhage.*
William Walworth Usher, of Wilkinson County, *on Malignant Congestive Bilious Fever.*
William Kinne Wilson, of Adams County, *on Dropsy.*
Elis Pusey Passmore, of Meadville, *on Uterine Hæmorrhage.*

ALABAMA.

William Kelsay Adams, of Limestone County, *on the Medical Topography and Endemic Fever of Limestone County, Ala.*
Richard Tucker Harper, of Lawrence County, *on the Analogy between the Liver and the Brain.*
Jacob Chancy Jordan, of Linden, *on the Operation of Lithotomy.*
Sidney Smith Prince, of Lagrange, *on the Medical Topography and Endemic Fever of Franklin Co. Ala.*
William Williams Wilson, of Monroe County, *on Sleep.*

TENNESSEE.

Erasmus Darwin Fenner, of Jackson, *on the Uterine Hæmorrhage of Pregnancy.*
James McKinney Grey, of Sumner County, *on Opium.*
John McCall, of Smith County, *on Purgative Medicines.*
Henry Holmes Treadway, of Murfreesborough, *on Syphilis.*

SOUTH CAROLINA.

Archibald Ingram Barron, of York District, *on Syphilis.*
Thomas Latta Dunlap, of Lancasterville, *on Hernia of the Abdominal Rings.*
Gilbert Tennent, of Abberville District, *on the Medical Topography of Abbeville District, S. C. with Observations on Bilious Fever, as it occurred there in the Summer of* 1828.

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FRANKLIN WILLIAMS, of Lauriens District, *on Diet.*

VIRGINIA.

WILLIAM BOMAR, of Halifax County, *on Hydrocele.*
PETER LEATH PENN, of Patrick County, *on Curved Spine.*

LOUISIANA.

OWEN CONNELLY BLOUNT, of East Baten-Rouge, *on the Teeth.*
WILLIAM HENRY LYNE, of East Feliciana, *on Bilious Fever.*

MICHIGAN.

RICE MCCOY, of Carey's Station, *on the Actual Cautery.*
JOSEPHUS MCCOY, of Carey's Station, *on the Pathology and Medical Treatment of Calculous Affections.*

OHIO.

RESIN THOMPSON, of Harrison County, *on Digestion.*

MEDICAL COLLEGE OF OHIO.

22. The Commencement for conferring degrees in this Institution, was held in the College Edifice on the 15th inst. The following is a list of the graduates, with the subjects of their respective Theses:

David Baird, of Middletown, O. on Ascites.
Milton Dunlap, of Ripley, O. on Dependence of Function.
Benjamin Hegeman, of Lebanon, O. on Anatomy and Physiology as the asis of Correct Medical Knowledge.
Lachlan M. Johnson, of Cincinnati, O. on Yellow Fever.
Abraham T. Markle, of Steubenville, O. on Causes, Symptoms. and Treatment of Intermittents.
Sydney S. Alexander, Shepherdsville, Ky. on Rubeola Vulgaris.
James Morrison, Bourbon county Ky. on Secale Cornutum.
Zacharia C. Offut, Georgetown, Ky. on Cholera Infantum.
David M. Pollard, Shelby county, Ky. on Delirium Tremens.
William H. Robards, Elizabeth, Ky. on Dyspepsia.
Joseph Somes, Glasgow, Ky. on Datura Stramonium.
William T. Thornton, Oldham county, Ky. on Dysentery.
John H. F. Thornton, Oldham county, Ky. on Hydrocephalus.
Job M. Baker, Vicksburgh, Mississippi, on Cynanche Trachealis.
Joseph W. Hegeman, Vicksburgh, Mississippi, on Bilious Fever.
William Monett, Washington, Mississippi, on Deague.
Archibald Smith, Amity county, Mississippi, on Pneumonia Biliosa.
William W. Bunnel, Washington, Ind. on Sick Stomach, or *Milk Sickness.*
James C. Kelso, Livonia, Ind. on Epidemic Dysentery.
John Lee Rogers, Greenville, Illinois, on Abortion.
Samuel Lesley, Abbeville, S. Carolina, on Functional Derangements of the Liver.

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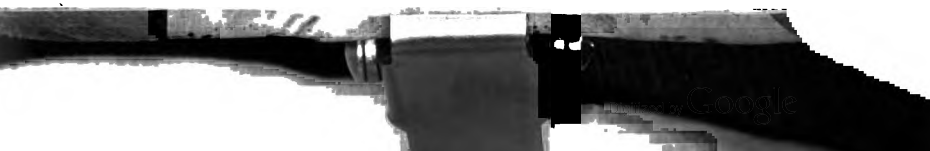

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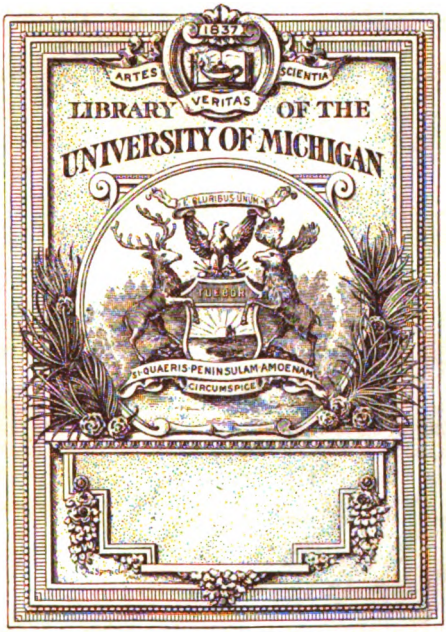

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